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ABSTRACT

The Department of Housing and Urban Development has developed its Community 2020 software to make it possible to depict graphically a community's housing resources, demographics, and level of economic development to use in community development activities and other planning processes. The combination of region- wide data and easy-to-use software provides everything community leaders need to participate in neighborhood revitalization and community redevelopment. This manual explains how to get started using the software and how to use it to map community characteristics, define grantee activities, identify resources, and propose additional projects. The software can help analyze a community's demographics and can be used to prepare a consolidated plan for development or change and to print maps of aspects of the area. Appendixes contain a description of regional geographic files and an answer sheet for exercises in the text. An attachment introduces the software. (SLD)

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ED 461 000

Community 2020
HUD Community Planning Software

Training Manual

Edition
9/17/97

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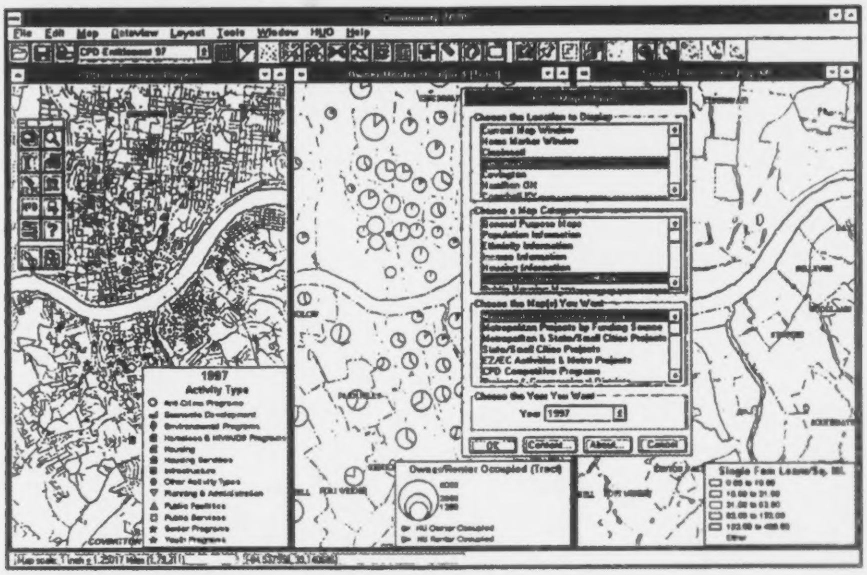
Version 2.0

A HUD PRODUCT DEVELOPED BY CALIPER CORPORATION

COMMUNITY 2020™

HUD COMMUNITY PLANNING SOFTWARE

The POWER to Connect People™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Dataview
Layout
Tools
Window
HUD
Help
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Choose the Location to Display
Choose a Map Category
Choose the Map(s) You Want
State/Small Cities Projects
EZ/EC Activities & Metro Projects
CPD Competitive Programs
Choose the Year You Want
Year 1997
OK
About...
Cancel
1997
Activity Type
Economic Development
Environmental Programs
Housing
Housing Services
Infrastructure
Other Activity Types
Planning & Administration
Public Facilities
Public Services
Senior Programs
Youth Programs
COVINGTON
Owner/Renter Occupied (Tract)
HU Owner Occupied
HU Renter Occupied
Single Fam Loans/Sq. Mi.

Informing Citizens, Connecting to Government

Community 2020™ HUD Community Planning Software Version 2.0 provides powerful new planning and communication tools that help citizens participate in housing and community development activities. Developed by the United States Department of Housing and Urban Development (HUD) and Caliper Corporation, Community 2020 describes the location, type, and performance of HUD-funded activities in your neighborhood, city, state, or region.

Community 2020 is a special edition of Maptitude Geographic Information System (GIS) for Windows, Caliper Corporation's award-winning desktop mapping software. Designed to help novice users access the power of GIS, Community 2020 makes it easy to access HUD program information.

If you can imagine the questions, Community 2020 can provide the answers. The powerful combination of region-wide data and easy-to-use software provides everything you need to participate in neighborhood revitalization and community redevelopment. Community 2020 lets you:

- Display maps showing population characteristics, housing conditions, economic indicators, HUD activities, and more.
- Review HUD activity descriptions, funding information, and annual performance data
- Create HUD activity databases for your neighborhood, city, and beyond
- Define your own projects and pinpoint their location on maps

Regional Data On Your Desktop

Community 2020 data sets are conveniently packaged by region on CD-ROM. HUD-funded activities are described for one or more program years. These data describe community development programs, FHA single-family and multi-family housing programs, public housing programs, Empowerment Zones and Enterprise Communities, and many of HUD's competitive programs. Program data provide detailed descriptions of activities including funding sources, performance indicators, building and tenant characteristics, and activity locations.

WHAT'S NEW IN COMMUNITY 2020 VERSION 2.0:

- More HUD program data
- Program data spanning multiple years
- HUD Program Performance Data
- Data Updates
- Demographic Estimates and Projections
- HUD Query Builder
- Enhanced HUD Map Library
- New Forms, Maps, and Reports

THE COMMUNITY 2020 DATA LIBRARY:

- U.S. Streets and Highways
- Cities, Towns, States, and Counties
- Detailed Census Data Down to the Tract and Block Group Level
- Congressional Districts
- 5-Digit ZIP Codes
- Community Development Entitlement Programs
- Empowerment Zones and Enterprise Communities
- HUD Competitive Programs
- Public Housing Data
- FHA Single- and Multi-Family Housing Programs
- Public Housing
- And More!

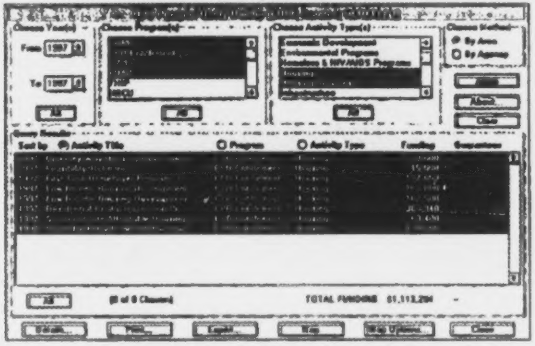
U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Andrew Cuomo, Secretary

WINNER
INNOVATIONS IN AMERICAN GOVERNMENT

> ***"2020 will make it possible for nonprofits to participate in a meaningful fashion – this is a major step toward democratizing the planning process."***

Regional geographic data sets include census tracts and block groups, street-level geography, and a variety of cartographic data sets such as highways, landmarks, water areas and more. Community 2020 also includes regional demographic data from the 1990 census of population and housing, plus demographic estimates for 1997, and demographic projections for 2002 and 2007. Demographic data are provided for a range of census boundaries from counties to block groups.

First, choose the years, programs, and activity types of interest to you. The HUD Query Builder finds all of the activities that meet your criteria...



...then use the HUD Query Builder tools to view the descriptions and locations of those activities.

Ask and Answer Questions

The HUD Query Builder unlocks HUD program data packaged with Community 2020. Simply define your area of interest and select HUD programs and activities for one or more years, Community 2020 generates a list of activities that meet your search criteria and provides access to a series of tools that let you:

- Sort activities by program and activity type
- Display detailed activity descriptions and funding information
- Map activities using symbols to show funding source or activity type
- Report funding information and HUD insurance and loan guarantees
- Export activities to a new geographic file for use in your own maps

DATA UPDATE

HUD program data will be regularly updated via CD-ROM. HUD will also provide monthly program data updates from the HUD web page (www.hud.gov).

The Easy Way To Make Maps

Making maps is easy using the HUD Map Library. Available directly from the Program CD, the HUD Map Library provides access to over 100 beautiful maps that illustrate population, ethnicity, housing, income, and HUD program data. Thematic maps and activity maps can be created for a specific year. Use the Map Library to choose a map and year for the area you wish to display, and Community 2020 generates a colorful map.

Each map is a window that opens anywhere in your region. You can zoom-in to see your neighborhood, display your city, county, or state, and use the HUD Info tool to reveal underlying information about activities in your area of interest.

Put Your Own Data on the Map

A growing world of data is available to citizens. Community 2020 can read dBASE files, text files, and other common data sources directly, and it can access data sources including Oracle, Access, and many others. You can import data, locate records, and expand the HUD Map Library using your own information.

You can create your own project data and locate proposed project sites on a map. Simply create a project description with the easy-to-use form, then put your project on the map by entering a street address or a census tract and block group number, or by pointing and clicking on the map.

Send Us Your Order

Community 2020 runs under Windows 3.11, Windows 95, and Windows NT 3.5 and 4.0. It requires an 80486 or Pentium-based computer equipped with a minimum of 12MB of RAM and a CD-ROM drive.

Community 2020 is packaged for one of four regions of the United States. You can choose one region for $249, or choose the deluxe edition that includes all four regions for $299. To order, call 800-998-9999. Ask for Product Sales.

Community 2020 comes in four regional editions. The States that comprise each region are:

EASTERN:
Connecticut
Delaware
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Puerto Rico
Rhode Island
Vermont
Virginia
Washington DC
West Virginia

SOUTHERN:
Alabama
Arkansas
Florida
Georgia
Kentucky
Louisiana
Mississippi
North Carolina
Oklahoma
South Carolina
Tennessee
Texas

CENTRAL:
Illinois
Indiana
Iowa
Kansas
Michigan
Minnesota
Missouri
Nebraska
North Dakota
Ohio
South Dakota
Wisconsin

WESTERN:
Alaska
Arizona
California
Colorado
Hawaii
Idaho
Montana
Nevada
New Mexico
Oregon
Utah
Washington
Wyoming

800-998-9999 · http://www.hud.gov

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CHAPTER

1

Introduction

Congratulations! You're about to explore HUD's latest tool for developing solutions to problems in your community. With this software, you can view maps that graphically depict your community's housing resources, demographics, and level of economic development—but that's just the beginning. As you become more familiar with the software, you'll learn how to create customized maps, how to create persuasive graphics and presentations, and even how to create maps using information you've collected about your own community.

Before You Begin

If you are preparing to be a trainer or to do the exercises in this manual on your own, we ask that you read this chapter completely before you begin. You may then start your work with Chapter Two, "What Does My Community Look Like?". Chapter 2 covers essential mapping tools and techniques that will be used in the other chapters.

The software can be used with either Microsoft Windows™ 3.x or Windows 95™ operating systems. Before you use the software, you should be familiar with Windows. If you are not, or if your skills are a bit rusty, you should take the time to brush up on Windows first.

Before you make any set of maps, you will want to create a space on your hard drive to store them all together, along with any data sets and documents that are specific to that effort. To keep a record and save your work when you perform the exercises in this manual, use the following steps to create a folder or directory titled, "My_Data" :

For Windows 95 Users:

1. "Right-click" the Start button and select Explore. The Explorer window will open to display your system's files.
2. Select the C: drive as the working folder in the main menu bar (as shown on next page). Choose ***File – New Folder***. A new folder appears on the right side of the explorer window. Type the name of the new folder, either "My_Data" or "my-data".

In This Chapter

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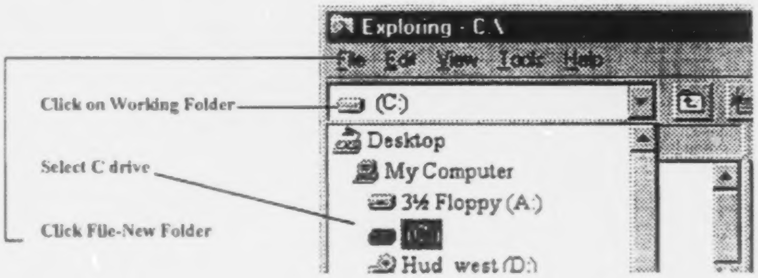
TIP

Users with slower computers should take note of the following ways to speed up your map making:

Hide or drop all unnecessary layers with the Map Layers dialog box. Click on the Map Layers tool in the main menu tool bar. Highlight unnecessary layers and click the Hide button or the Drop button (refer to page 2-20).

Stop the computer from redrawing the entire map. After every change you make, the computer redraws your map, which can be very time consuming. To stop this, hit the ESC key to end map drawing, and then make any additional changes you wish to make.

(NOTE: If a previous user has already created the My_Data folder, you need to delete the files contained within it. In Explorer, highlight and double click the My_Data icon to view the contents of the folder. Highlight all of the files within My_Data by SHIFT-clicking the first and last file. Click on the right mouse button and select delete. Verify this deletion.)



Windows 3.x Users:

1. Open the File Manager. The File Manager window will open to display your system's files.
2. Make sure your hard drive, C:\ , is highlighted, and choose ***File – Create Directory***. The Create Directory dialog box appears.
3. Type the name of the new folder, either "My_Data" or "my-data", and click OK. The new folder appears on the right side of the File Manager window.

(NOTE: If a previous user has already created the My_Data directory, you need to delete the files contained within it. In File Manager, highlight and double click the My_Data icon to view the contents of the folder. Highlight all of the files within My_Data by SHIFT-clicking the first and last file. Select ***File-Delete***. Verify this deletion.)

Training Manual Conventions

Trainers and users may want to familiarize themselves with the conventions, outlined below, that are followed in this manual.

Chapter Organization

The first page of each chapter contains:

- An "Introduction" providing an overview of the chapter
- A Problem Statement that describes a real world scenario a student might use the software to help solve.
- A subsection of learning objectives, entitled "What You Will Learn in Chapter X"
- A subsection entitled "Requirements," that outlines the prerequisites, if any, for the chapter
- A subsection entitled "In This Chapter," listing the chapter exercises and page numbers.
- A "Chapter Summary Questions" section at the end of each chapter to test the student on the material covered.

Exercise Organization

The first page of each exercise contains:

- An "Introduction" that provides an overview of the exercise and (if space permits), an illustration of the final result of the exercise.
- A subsection of learning objectives, entitled "What You Will Learn in Exercise X,"

The first exercise begins on the second page of the exercise section and a "Wrapping Up" subsection at the end of the exercise summarizes what the trainee has learned.

Exercise Steps

- Steps are organized under subheadings that group steps into functional operations.

  Example: "Adding the Block Group Layer to the Study Area"

- Subheadings are followed, where necessary, by brief explanatory text to provide context for the steps.

  Example: "In the next few steps you'll add a map layer that contains demographic information."

- Steps are numbered and typically begin with an action verb such as "Choose" or "Select."

  Example: "Choose ***Map–Layers*** from the main menu..."

- Steps instructing a menu selection indicate the selection in bold italics. A graphic of the button or icon alternative to the menu selection is sometimes included in the text of the step.

  Example: "Choose ***Map–Layers*** from the main menu or click the Map Layers button on the main tool bar."

  In this case the student is being instructed to click the "Map" menu option, then select the menu item labeled "Layers."

- In early chapters, a picture of the dialog box or window typically follows the instructional text. In later chapters fewer pictures are provided.

- Text identifying or explaining the change that appears on screen follows the instructional graphic, where appropriate. Then a screenshot of the change usually follows.

  Example: The text, "Your map window should now resemble the illustration below:" precedes an illustration of the changed map window.

Call-Outs

Steps may include a series of smaller actions provided for in "call-outs" next to the interface element (e.g., an illustration of a dialog box). Call-outs are text instructions with lines pointing, for example, to a button to click.

- Call-out actions are not numbered but are executed normally from top to bottom in the illustration.

  If a specific sequence of actions is important, this is noted in the text of the step.

  Example: "To locate this file, make the selections indicated in the illustration below, in this order: choose the drive containing the software's files, then the folder (ccdata), the file type (geographic), and the file (ccbg.cdf). Then click OK."

- Call-outs are shown in bold or "regular" text.

  Bold call-outs indicate an action that is to be taken by the student.

  Example: "**Click OK.**"

  Regular text is reference or instructional information that does *not* require action.

  Example: "Block boundaries split into two areas, with new boundaries between them."

Types of Graphics

There are three types of graphics used in the Training Manual:

- Graphics in the text of a step, such as a "button" to be clicked (see above).
- Graphics with call-outs and explanations involving windows and buttons. The call-outs are usually bold, indicating that an action should be taken.
- Graphics representing *results-of-actions*, for example, a map window showing the effects of the previous action.

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CHAPTER
2

What Does My Community Look Like?

REQUIREMENTS FOR CHAPTER 2

The exercises in this chapter assume that you have a working familiarity with Windows 95 or Windows 3.x, and that the software is already installed on your computer.

Introduction

Defining a community and examining its makeup are often the first steps in addressing community problems. With this software, as in the real world, you can define your community in a number of ways — from traditional geopolitical boundaries to ethnic groupings. And once you have defined your community, the software allows you to examine its social, demographic and other characteristics.

Problem Statement

You are the chairperson of a non-profit organization scheduled to lead a group discussion focusing on a neighborhood in your city. You have just received a new GIS software package, Community 2020, and want to incorporate visual aids highlighting social, economic, and demographic characteristics of the community into your presentation. How do you get started?

What You Will Learn in Chapter 2

This chapter presents essential tools and concepts that will serve as the foundation for exercises in the following chapters.

- In Exercise 1 you'll learn how to find your community, how to zoom, change map views, and "mark" those views for later use.
- In Exercise 2 you'll explore the Map Library. The Map Library contains dozens of pre-designed maps showing geographic, demographic, HUD project and other information.
- In Exercise 3 you'll learn about map layers, the key to displaying community information on your maps.
- In Exercise 4 you'll learn how to custom-define your own community boundaries and create a new map layer to highlight them on any other map. Then, you'll create a "marker" of the location, and add the new map of your community to the Map Library.

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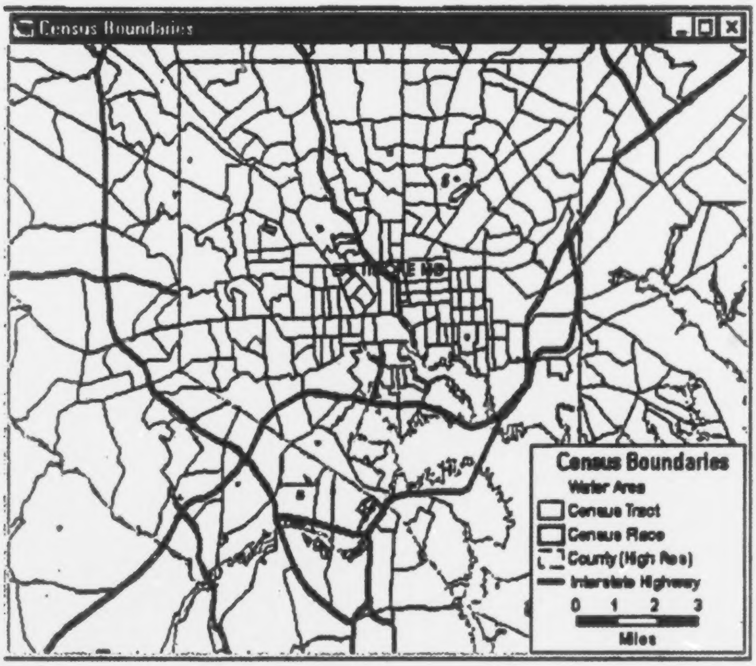
Exercise 2: Using the Map Library 2-10
Exercise 3: Layering Information on Your Community Map 2-15
Exercise 4: Defining Your Own Community Boundary 2-24

Exercise 1: Viewing Your Community

Introduction

The software makes it easy to find your community and display it in an on-screen map. Easy-to-use tools allow you to change map locations (map-center and zoom-level) to see different regions and in more or less detail. You can even save these locations in a handy list of "markers." Simply clicking on a marker "zooms" the map to the new location.

Once you've found your community, you can zoom in and out at any time, or "pan" to view a different center location within the map window.


Census Boundaries
BALTIMORE MD
Census Boundaries
Water Area
Census Tract
Census Place
County (High Res)
Interstate Highway
0 1 2 3
Miles

What You Will Learn in Exercise 1

This exercise will guide you through the process of locating your community. Using a neighborhood in the city of Baltimore, Maryland as an example, you'll learn how to:

- Use "markers" to change the view of a map.
- Reset your default markers.
- Find and display your community on a map.
- Zoom to views of your community at different scales.
- "Pan" your view to a different location.

Steps

Opening a Map with a Marker

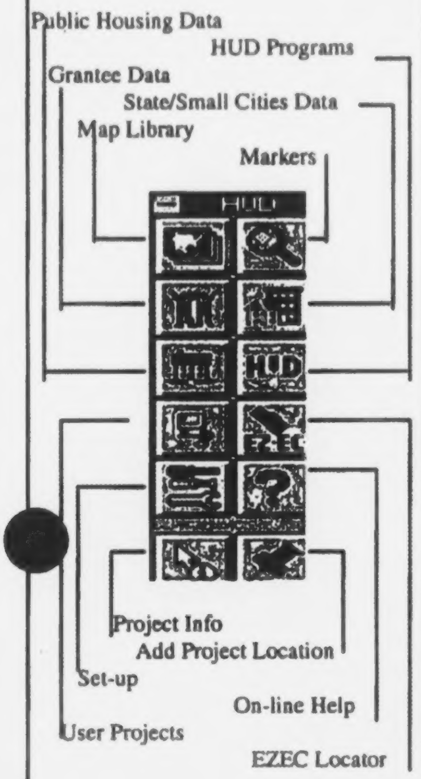
A "marker" is a map view setting of *location* and *scale* (magnification) for any map. The software allows you to save markers and give them names, such as "My Neighborhood." Once you have saved a marker, you can simply select it from a list to automatically change your view of the map to the marker's location and magnification – regardless of the map you are viewing.

Since choosing a marker changes the map view, you must have a map open in order to use a marker. However, you can open a map and choose a marker at the same time when you open maps in the Map Library (you'll learn more about the Map Library in Exercise 2).

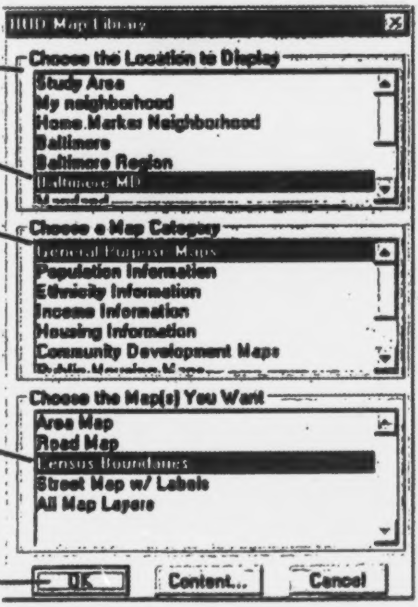
1. **Choose *HUD–Map Library* or click the Map Library button** on the main menu (see FYI at left).

   The Map Library dialog box is displayed. The dialog box includes a list of markers. You can select any marker (and therefore any map location and zoom-level) when opening any map file.

FYI
The ***HUD - Toolbox*** command shows and hides the following tools:



2. **Make the selections indicated in the illustration below.** (If your Map Library dialog box does not include "Baltimore MD" under "Choose the Location to Display," choose a different "Location to Display.")


HUD Map Library

Choose the Location to Display
- Study Area
- My neighborhood
- Home Marker Neighborhood
- Baltimore
- Baltimore Region
- Baltimore MD
- Maryland

Choose a Map Category
- General Purpose Maps
- Population Information
- Ethnicity Information
- Income Information
- Housing Information
- Community Development Maps
- Public Housing Maps

Choose the Map(s) You Want
- Area Map
- Road Map
- Census Boundaries
- Street Map w/ Labels
- All Map Layers

This scrolling list shows all of your markers

Choose Baltimore MD"

Choose General Purpose Maps

Choose Census Boundaries

Click OK

The Census Boundaries map is displayed (see illustration in Introduction, previous page). This pre-designed map shows county lines, highways, bodies of water, census tract boundaries and census place boundaries.

Setting the Home and Default Markers

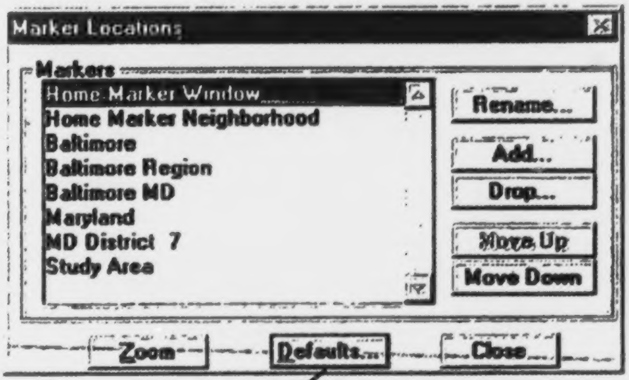
Default markers are set when you install the software, and the "main" default marker is your home marker. You can change your home marker and add additional markers at any time.

Now that you have the Census Boundaries map open, let's reset the home marker to a new location:

3. **Choose *HUD – Markers*, or click the Markers tool button** (see FYI, previous page).

4. The Marker Locations dialog box appears, showing any markers previously entered, such as when the program was installed. **Click the Defaults button.**

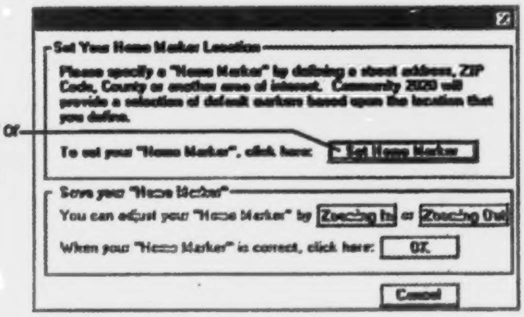
TIP
Remember, you can view a marker location any time, regardless of the map being displayed, *if* the marker is within your CD-ROM's region. For example, while viewing a map of Philadelphia with the *Eastern Region* CD-ROM, you could use a marker of Baltimore, but not San Francisco.



Home Marker Window
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
MD District 7
Study Area

Click Defaults

5. The Set Default Markers dialog box appears. **Click the Set Home Marker button.** If a home marker has already been set, the Set Home Marker button will read Reset Home Markers instead.



Please specify a "Home Marker" by defining a street address, ZIP Code, County or another area of interest. Community 2020 will provide a selection of default markers based upon the location that you define.

To set your "Home Marker", click here:

You can adjust your "Home Marker" by Zooming In or Zooming Out

When your "Home Marker" is correct, click here: OK

Click Set Home Marker or Reset Home Marker, whichever is displayed

The Find dialog box appears. The Find dialog box allows you to locate a position anywhere in the country and to change your map view to show that

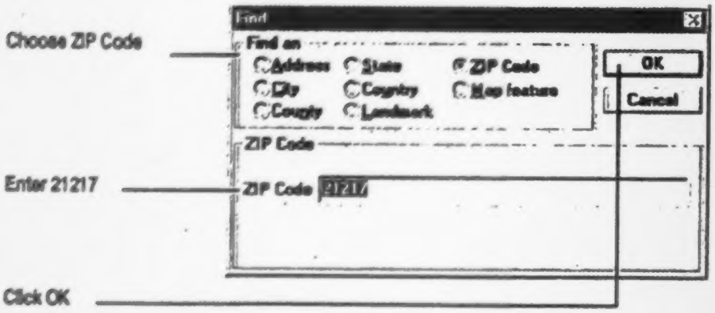
location. You can find a location based on its city, street address, ZIP code, or several other options, including landmarks, HUD projects, or other map features.

TIP
You can use the Find feature any time a map is open – not just when setting the default markers. Click the Find button on the main toolbar to display the Find dialog box (shown at right).

Make a selection in the dialog box, click OK, and the map view in your active map window will change to the location you indicated.

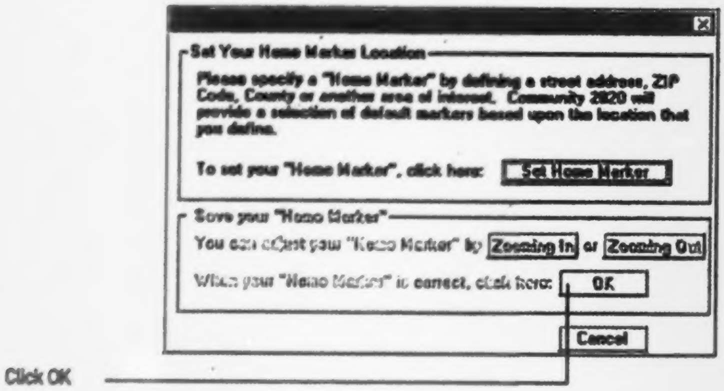
(Note: you may have to change the map scale in order to make the desired map features visible.)

6. In our example, you'll enter a ZIP code that will be the center of your marker location:


Choose ZIP Code
Enter 21217
Click OK
Find
Find on
○ Address
○ State
● ZIP Code
○ City
○ Country
○ Map feature
○ County
○ Landmark
OK
Cancel
ZIP Code

ZIP Code: 21217

7. You return to the Set Default Markers dialog box. Click OK in the Set Default Markers dialog box.


Set Your Home Marker Location
Set Home Marker
Save your "Home Marker"
Zooming In
Zooming Out
OK
Cancel
Click OK

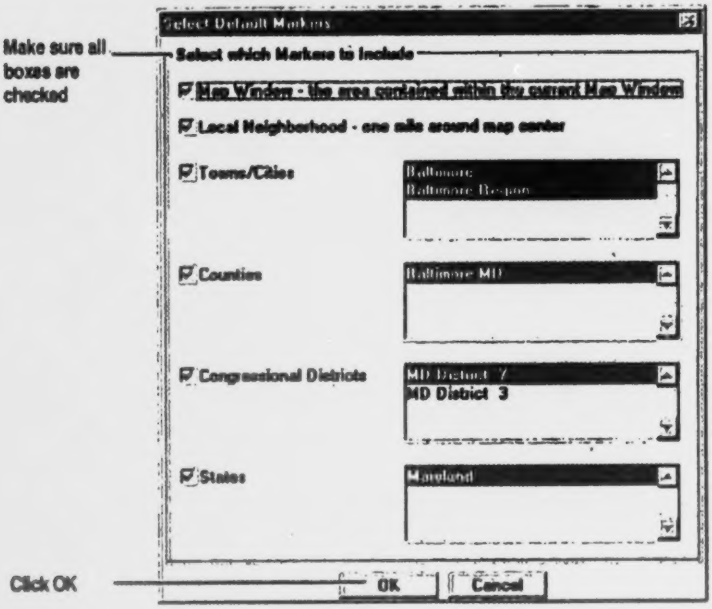
Please specify a "Home Marker" by defining a street address, ZIP Code, County or another area of interest. Community 2020 will provide a selection of default markers based upon the location that you define.

To set your "Home Marker", click here:

You can adjust your "Home Marker" by Zooming In or Zooming Out

When your "Home Marker" is correct, click here:

8. The Select Default Markers dialog box appears. All options are checked by default (if they are not checked, check them all now). The seven map views listed as Default Markers will appear in your Markers list. **Click OK** to accept these defaults.


Select Default Markers
Select which Markers to Include
OK
Cancel

Make sure all boxes are checked

☑ Map Window - the area contained within the current Map Window

☑ Local Neighborhood - one mile around map center

☑ Towns/Cities: Baltimore, Baltimore Region

☑ Counties: Baltimore MD

☑ Congressional Districts: MD District 7, MD District 3

☑ States: Maryland

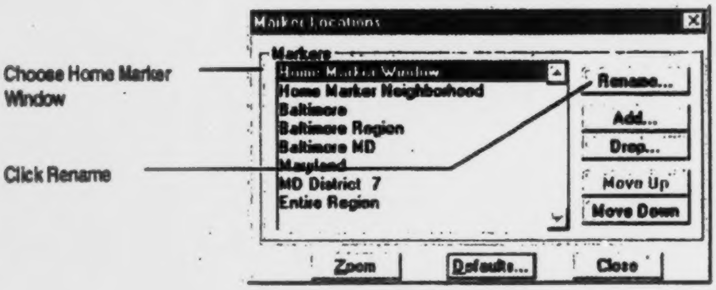
Click OK

The Marker Locations dialog box appears. This is the same dialog box that appears when you click the Markers button in the HUD tool box.

Giving Your Marker a Name

Options in this dialog box include adding and "dropping" markers, changing the order in which the markers are listed ("Move Up" and "Move Down"), and renaming markers. You'll rename a marker next.

9. In this dialog box, **choose "Home Marker Window"** and **click Rename.**

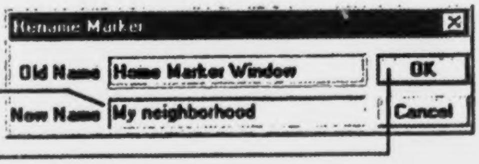

Marker Locations
Markers
Rename...
Add...
Drop...
Move Up
Move Down
Zoom
Defaults...
Close

Choose Home Marker Window

Click Rename

Markers:
- Home Marker Window
- Home Marker Neighborhood
- Baltimore
- Baltimore Region
- Baltimore MD
- Maryland
- MD District 7
- Entire Region

10. The Rename Marker dialog box is displayed:


Rename Marker
OK
Cancel

Old Name: Home Marker Window

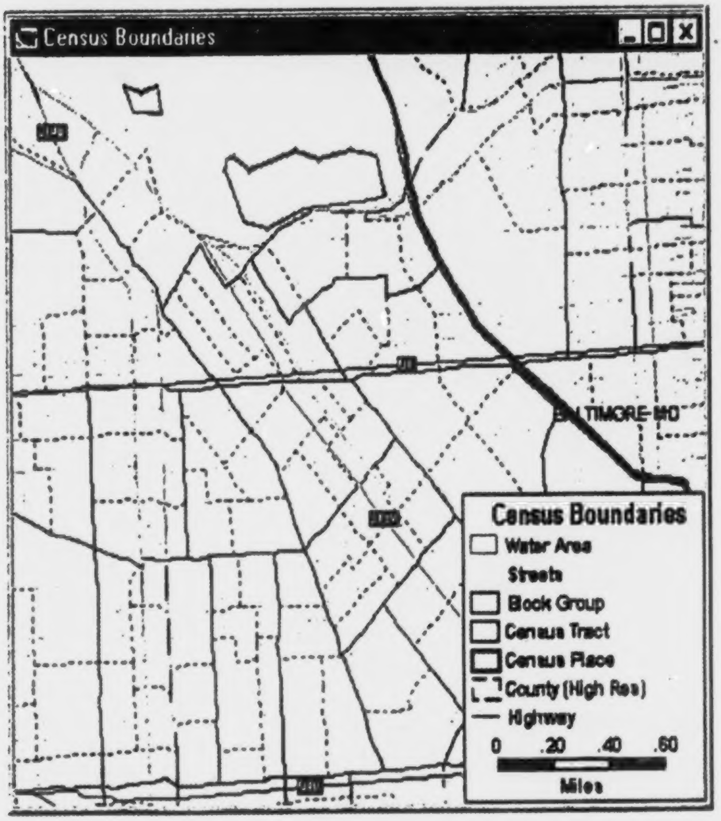
New Name: My neighborhood

Enter My Neighborhood as the new name

Click OK

11. The new name is saved and you return to the Marker Locations dialog box (shown in Step 9 above). **Click the Zoom button** in the Marker Locations dialog box.

    Your map is now centered on the map feature (in this case, zip code 21217) that you entered in Step 6:


Census Boundaries
BALTIMORE MD
Census Boundaries
Water Area
Streets
Block Group
Census Tract
Census Place
County (High Res)
Highway
0
.20
.40
.60
Miles

12. **Click the Close button** of the Marker Locations dialog box. Your Home Marker is now automatically saved.

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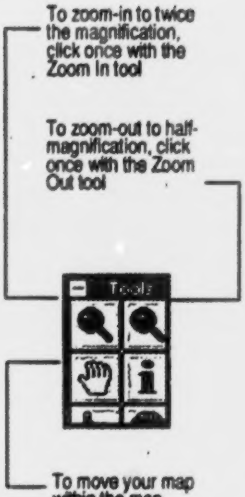
Testing Your Marker

Now let's try out the Markers you just created.

13. **Close any open maps with** ***File -Close All*** from the main menu. **Click the Map Library button** in the HUD tool box. **Select My Neighborhood** as the location to display, then **choose a category and map that you haven't already viewed. Click OK.**

    The map you selected will appear, centered on the same geographic location and at the same scale as your My Neighborhood marker, but showing different layers of map information.



To zoom-in to twice the magnification, click once with the Zoom In tool

To zoom-out to half-magnification, click once with the Zoom Out tool

To move your map within the map window, click-and-drag with the Pan tool

Using the Pan and Zoom Tools

Recall that each of your markers represents a particular location and magnification of a map view. But markers are not the only way to change a map's location and magnification. You can also use the **Pan** tool to move the map around within the map window, and you can zoom in or out on a new location with the Zoom tools on the main toolbox. (See illustration at left.) The Pan and Zoom tools are useful for making frequent, small or temporary changes of map view in the vicinity of a marker.

The Pan tool is very simple to use: **select it** in the Maptitude tool box (see illustration at left), **click-and-drag** on an open map, and your map will slide with your mouse movement within the map window. **Release the mouse button** and your map will redraw.

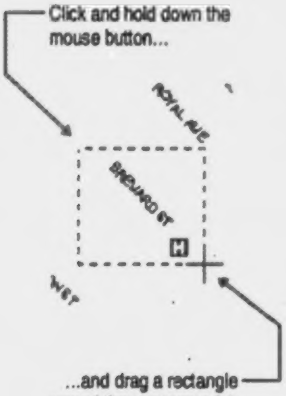
The zoom tools have two methods of operation:

The "single-click" method:

- To view an area in more detail, **click the Zoom In button**. The mouse pointer will change to cross-hairs. Now **click anywhere** on the map. The map will appear at twice the previous magnification, centered on the location of your mouse-click.
- To see a larger area on your screen, **click the Zoom Out button**. **Click anywhere on the map.** The map will appear at half the previous magnification, centered on the location of your mouse-click.

The "click-and-drag" method (Zoom In tool only):

- **Choose the Zoom In tool. Click-and-drag the mouse across a map area.** A rectangular dotted outline will extend between your first click point and the current mouse pointer position. When you **release the mouse button**, the view will zoom-in, filling the map window with the map area that you outlined.



Click and hold down the mouse button...

...and drag a rectangle around the area you wish to magnify

Wrapping Up

You've now learned the essentials of viewing maps: you've used the Markers tool and Find dialog box, you've created and used markers, and you've used the Zoom and Pan tools to change the location and magnification of your map view.

In later exercises, you'll use all of these tools frequently. In the Exercise 2, you'll use markers as you learn about the Map Library. And in Exercise 4, you'll create a marker for a map you'll create yourself.

Exercise 2: Using the Map Library

FYI
Unlike the paper maps you are used to, any map in the Map Library can show information for *any* location on your regional CD-ROM. Map files and markers are independent.

This is a key concept:

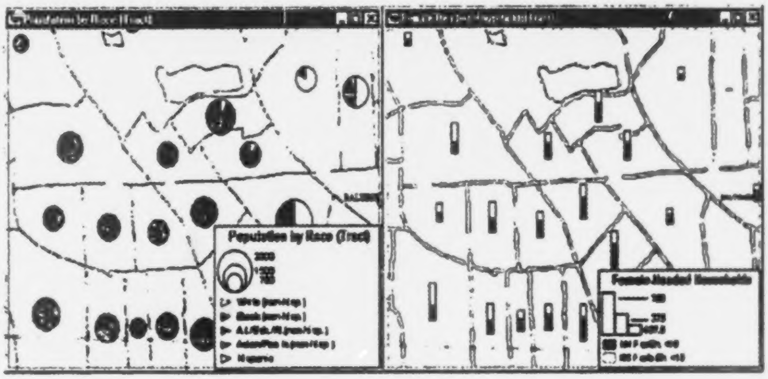
- When you open a map in the Map Library, the marker location you choose determines the center point and scale.
- The map file you choose determines the map's "layers" and how the information is graphically presented.

Introduction

The software provides dozens of pre-designed maps in a Map Library. Each map in the Map Library displays a combination of geographic, census, HUD project, infrastructure or other information. While you can't change or delete the maps in the Map Library, you can make new maps based on maps in the Library, and make new ones "from scratch."

To make your own maps, you'll often begin by finding the Map Library map that already closely matches your needs. Then you'll modify it to make it suit your needs precisely. You can even store your customized maps in the Map Library for later use.

For this approach, familiarity with the Map Library collection is essential.



What You will Learn in Exercise 2

This exercise guides you through the process of accessing the Map Library with six different sample maps.

Exercise 2 will help you become familiar with:

- The variety of map types (general purpose, HUD, economic, etc.) available through the Map Library
- The variety of map themes (color and pattern themes, charts, etc.) used to communicate map information.
- The patterns in your community that become evident through side-by-side comparisons of different maps of the same location.

Steps

In this exercise you'll use the "My Neighborhood" marker, which you created in Exercise 1, as a starting point. Then you'll repeat steps a) through c) on the next two pages, to view the same location through six different Map Library maps.

Opening the Map Library

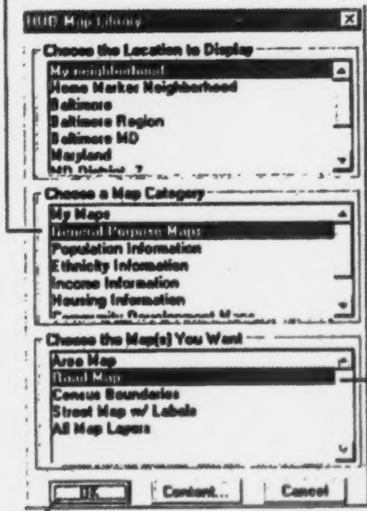
1. **Choose *HUD – Map Library,* or click the Map Library button** in the HUD tool box.

   The Map Library dialog box will appear. The default markers you set in Exercise 1 should appear in the upper pane of the Map Library dialog box.

2. **Follow steps a) through c) for each of the six maps indicated on the following pages.**

To open the first map:

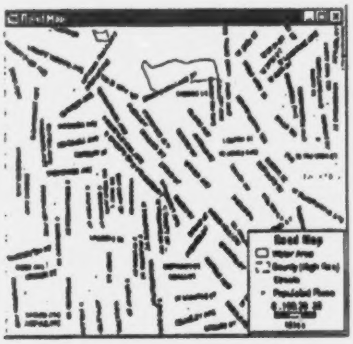
a) Choose General Purpose Maps


HUD Map Library
Choose the Location to Display
My neighborhood
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
Choose a Map Category
My Maps
General Purpose Maps
Population Information
Ethnicity Information
Income Information
Housing Information
Choose the Map(s) You Want
Area Map
Road Map
Census Boundaries
Street Map w/ Labels
All Map Layers
OK
Content...
Cancel

b) Choose Road Map

c) Click OK

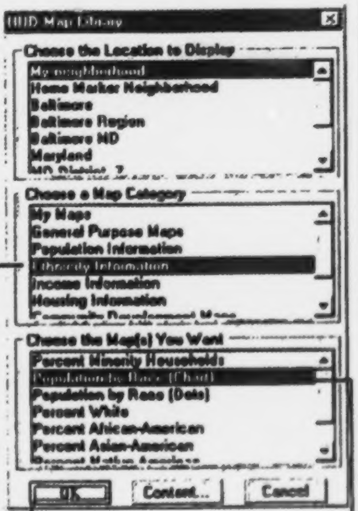
The map appears on screen:



This map shows labeled streets, county lines, and bodies of water in the My Neighborhood marker area.

To open the second map:

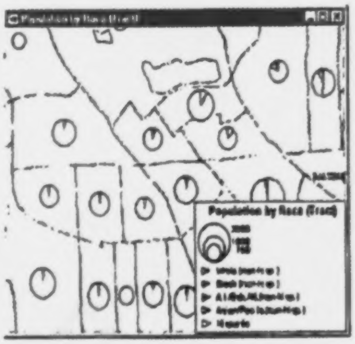
a) Choose Ethnicity Information


HUD Map Library
Choose the Location to Display
My neighborhood
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
Choose a Map Category
My Maps
General Purpose Maps
Population Information
Ethnicity Information
Income Information
Housing Information
Choose the Map(s) You Want
Percent Minority Households
Population by Race (Chart)
Population by Race (Dots)
Percent White
Percent African-American
Percent Asian-American
OK
Content...
Cancel

b) Choose Population by Race

c) Click OK

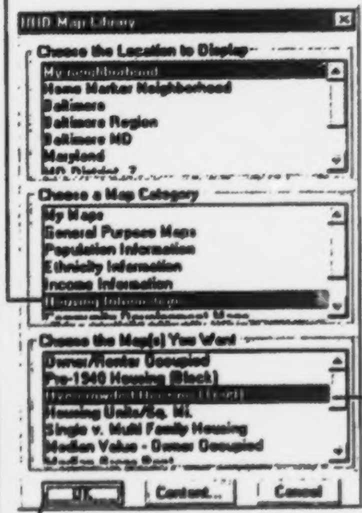
The map appears on screen:


Population by Race (Tract)

This map represents the population size in each census tract of My Neighborhood as the size of a colored pie chart. Proportions of population in each census tract, by race, are shown as pie wedges.

To open the third map:

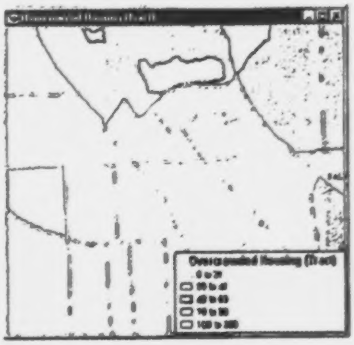
a) Choose Housing Information


HUD Map Library
Choose the Location to Display
My neighborhood
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
Choose a Map Category
My Maps
General Purpose Maps
Population Information
Ethnicity Information
Income Information
Housing Information
Choose the Map(s) You Want
Owner/Renter Occupied
Pre-1940 Housing (Black)
Overcrowded Housing (Tract)
Housing Units/Sq. Mi.
Single v. Multi Family Housing
Median Value - Owner Occupied
OK
Content...
Cancel

b) Choose Overcrowded Housing

c) Click OK

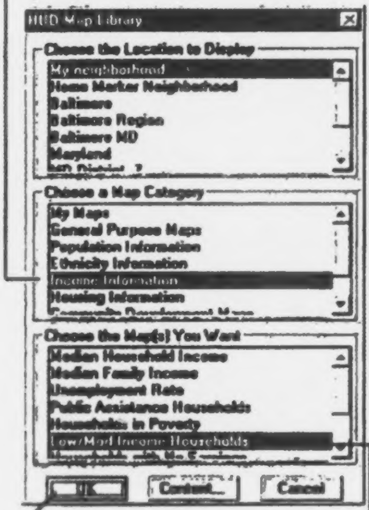
The map appears on screen:


Overcrowded Housing (Tract)

Each census tract in My Neighborhood is colored differently to reflect the degree of housing overcrowding. Darker census tracts have more overcrowded housing conditions.

To open the fourth map:

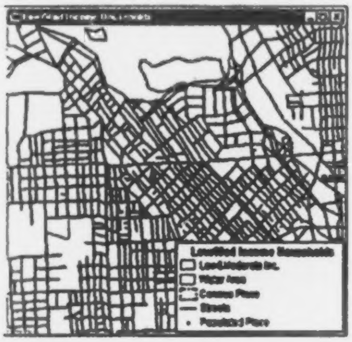
a) Choose Income Information


HUD Map Library
Choose the Location to Display
My neighborhood
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
Choose a Map Category
My Maps
General Purpose Maps
Population Information
Ethnicity Information
Income Information
Housing Information
Choose the Map(s) You Want
Median Household Income
Median Family Income
Unemployment Rate
Public Assistance Households
Households in Poverty
Low/Mod Income Households
OK
Content...
Cancel

b) Choose Low/Mod Income...

c) Click OK

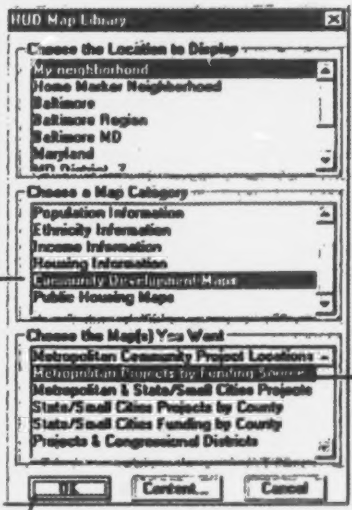
The map appears on screen:


Low/Mod Income Households
Water Area
Streets

This map shows the low-to-moderate income areas as shaded; the unlabeled streets provide a visual reference.

To open the fifth map:

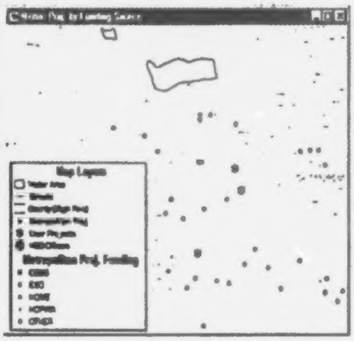
a) Choose Comm. Devel. Maps


HUD Map Library
Choose the Location to Display
My neighborhood
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
Choose a Map Category
Population Information
Ethnicity Information
Income Information
Housing Information
Community Development Maps
Public Housing Maps
Choose the Map(s) You Want
Metropolitan Community Project Locations
Metropolitan Projects by Funding Source
Metropolitan & State/Small Cities Projects
State/Small Cities Projects by County
State/Small Cities Funding by County
Projects & Congressional Districts
OK
Content...
Cancel

b) Choose HUD Projects by Funding source

c) Click OK

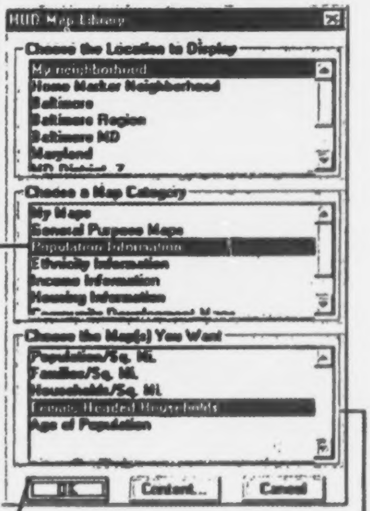
The map appears on screen:


Map Layers
Metropolitan Proj. Funding
HOME

This map shows labeled locations of HUD projects, with a differently colored dot for each HUD funding source. Unlabeled streets, county lines, and bodies of water provide visual references.

To open the sixth map:

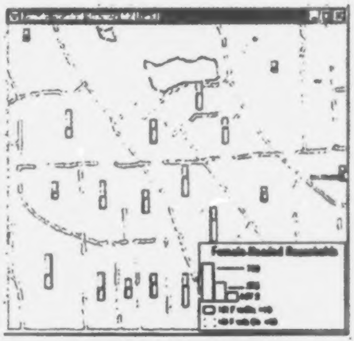
a) Choose Population Information


HUD Map Library
Choose the Location to Display
My neighborhood
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
Choose a Map Category
My Maps
General Purpose Maps
Population Information
Ethnicity Information
Income Information
Housing Information
Choose the Map(s) You Want
Population/Sq. Mi.
Families/Sq. Mi.
Households/Sq. Mi.
Female-Headed Households
Age of Population
OK
Content...
Cancel

b) Choose Female-Headed Households

c) Click OK

The map appears on screen:

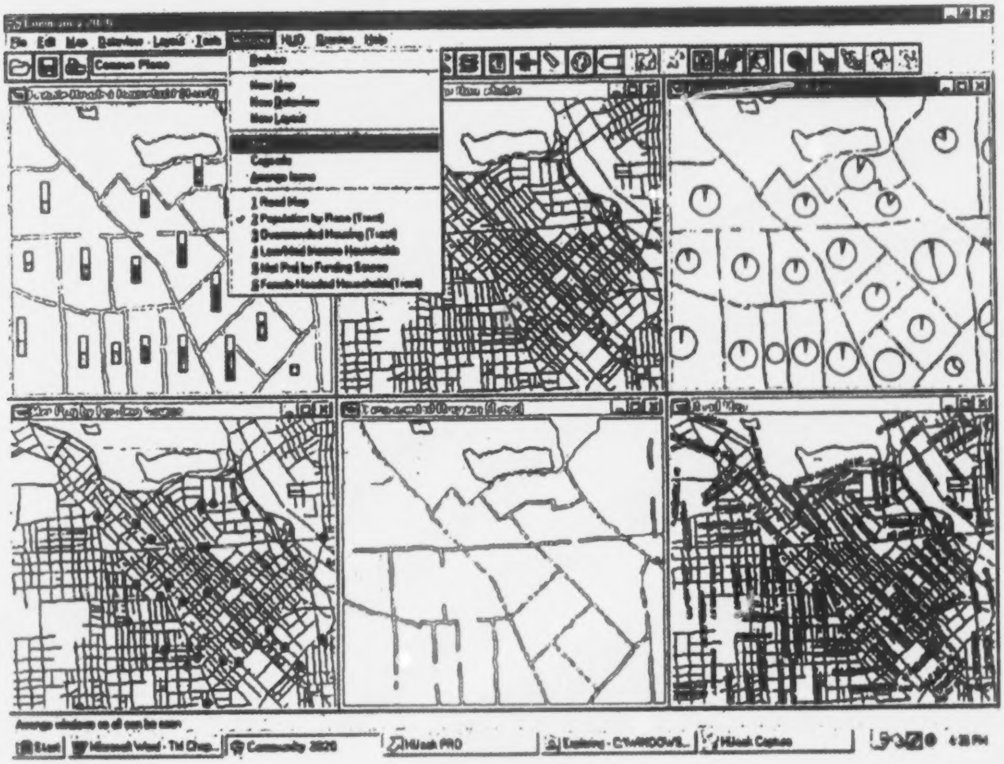

Female-Headed Households

The height of each vertical bar (shown for each census tract in My Neighborhood) is proportional to the number of female-headed households. The shaded portion of each bar represents the number of these households with children under 18.

Viewing All Six Maps

When you've opened all six of the maps, they will be "stacked" on screen. But often it's useful to view different maps of the same area side-by-side. This allows you to quickly compare the demographics and resources in your community – say, unemployment and HUD projects – without creating a whole new map.

3. **Select** ***Window – Tile*** as shown in the illustration below. The maps will arrange themselves in a 3 x 2 grid. You can now compare all six maps side-by-side. (Note: **Click on each map and then on the Show or Hide the Legend button** in the main toolbar if the legends take up too much space.)


File Edit Map Database Layout Tools Window HUD Browse Help
1 Road Map
2 Population by Race (Tract)
Start
Community 2020
HiJaak PRO
HiJaak Capture

Wrapping Up

You've just learned the Map Library essentials: how to access, browse, and compare maps. You should now have an idea of some of the kinds of maps provided in the Map Library, and the different map themes that are used to present information. In Exercise 3, you'll learn how to add your own map to the Map Library. We recommend browsing the Map Library to identify other maps and map themes that may be especially relevant to your work.

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Exercise 3: Layering Community Information on Your Map

Introduction

As you learned in Exercise 2, what distinguishes one map file (e.g., "Census Boundaries") from another map file (e.g., "Streets") is not the location it displays but the information shown on the map and how the information is displayed. Every map file is simply a collection of "layers" of different kinds of information about any location with instructions for displaying the layers. The user can view the same map anywhere in the region.

Mastering the layers concept is essential to getting the most out of your maps. There are just four key points to remember:

- Each layer typically shows just one type of data, such as streets or HUD Projects.
- Multiple layers are superimposed like overhead transparencies. For example, counties could be the bottom layer, streets could be the next, then highways, and finally points of interest on top — appearing on-screen as a single map with a variety of information. The sidebar at left explains how to position the layers.
- Like transparencies, layers in a map file can be rearranged, added or dropped, renamed, or hidden.
- Each layer has graphical attributes that you can change to meet your communication goals: (1) a *theme*, such as colored areas, scaled symbols, or pie charts; (2) *labels*, such as highway names or chart labels; and (3) *styles*, such as border width or fill color.

TIP

There are three types of map layers: areas, lines, and points (for example, states, highways, and points of interest respectively).

As a rule of thumb, area layers should be positioned under line layers, and line layers should be under point layers, so that one layer doesn't obscure the layers beneath.

What You will Learn in Exercise 3

This exercise walks you through the process of selecting layers, making modifications to them, and saving your modified map. You'll learn to:

- Select the "working" layer and make basic changes within it, such as adding labels to map features and changing graphic styles.
- Hide or show a map's layers.
- Save the modified map under a new name.

DEFINITION

Map theme:
A graphical style for representing map information.

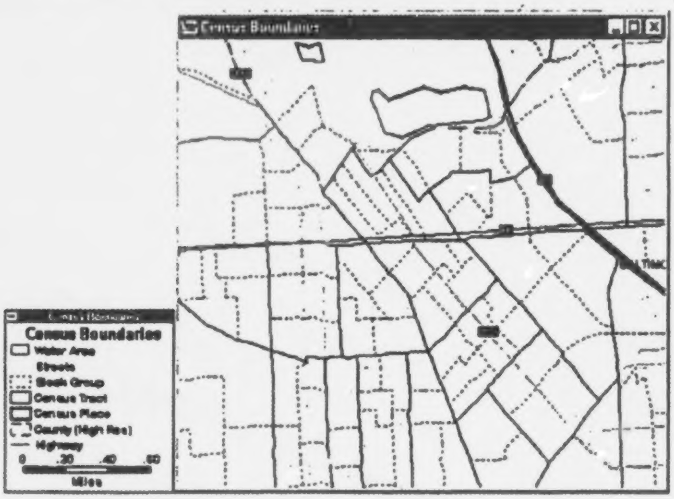
Themes include the use of colors or hatch-marks to differentiate map areas, dot clusters to represent population density, or pie-charts to show percentage breakdowns by ethnicity or income.

Steps

1. **Choose** ***HUD – Map Library*****, or click the Map Library button** in the HUD tool box. **Select the following and click OK:**

   Location: My Neighborhood
   Map Category: General Purpose Maps
   Map: Census Boundaries

   The Census Boundaries map is displayed:



> **TIP**
> You can select the Pointer tool from the main toolbox and double-click on your map's legend to display a dialog box of legend settings. You can choose to view the legend "attached" to the map, or floating in its own separate window.

2. If the legend is not displayed, **click the Show or Hide the Legend** button on the main tool bar (see illustration on next page). Clicking this button toggles between showing or hiding the map legend.

Labeling Map-Layer Features

Your first modification of a layer will be to name the highways.

Names of map features, such as highways, are stored in geographic files—even if they don't necessarily appear on a map. For example, the geographic file of highways contains standard highway names such as "I-395," as well as alternate and local names such as "Shirley Highway."

You can choose the names you want to display on your map as labels, and change the label size and color, and their position relative to the feature they identify, as well as other attributes. You do this by displaying labels in the Highway layer.

TROUBLESHOOTING TIP
If your attempt to change a label doesn't "take," or if the Labels dialog box doesn't present you with the appropriate options, you may have forgotten to select the proper *working layer*.

Check the Working Layer pull-down menu on the main toolbar. It should show the name of the layer that you want to change. If not, select it from the menu and repeat your label change.

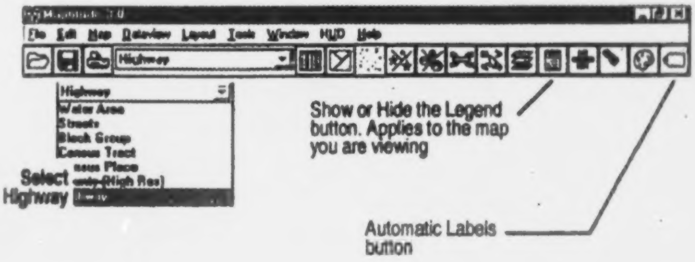
FYI
The Labels feature is available in two places:

- Through the Automatic Labels button on the main toolbar.
- Through the Labels button in the Layers dialog box.

The main difference is this:

- The Automatic Labels button on the main toolbar affects the style of the *working layer only*.
- Within the Layers dialog box, you can select *any* layer to change its labels – even if the layer happens to be hidden on the map.

3. **Click the Working Layer pull-down menu and select Highway.** As with many layer operations, it is important to remember to select the desired layer first. (The illustration below indicates the Working Layer pull-down menu, as well as two other tool buttons you may use in this exercise.)



Select Highway

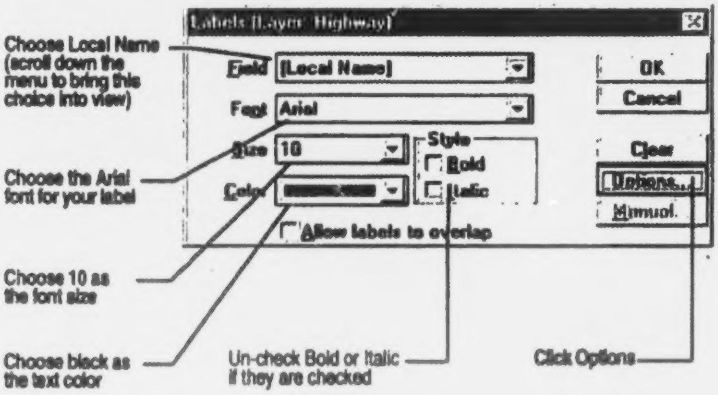
Show or Hide the Legend button. Applies to the map you are viewing

Automatic Labels button

Now that we've made Highway the working layer, you can make changes to that layer. The following steps show you how to customize highway names and styles with the Automatic Labels button.

4. **Click the Automatic Labels button** on the main tool bar. The Labels dialog box will appear.

5. **Make the following selections in the dialog box:**



Field [Local Name]

Font Arial

Size 10

Color

Style
☐ Bold
☐ Italic

☐ Allow labels to overlap

Choose Local Name (scroll down the menu to bring this choice into view)

Choose the Arial font for your label

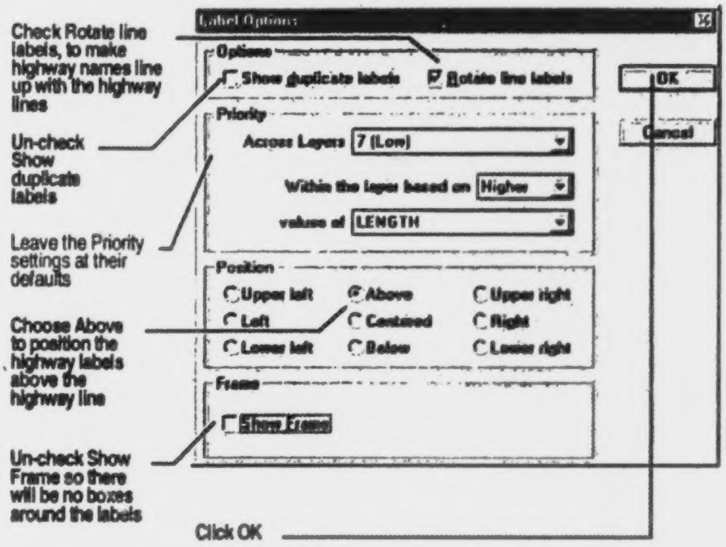
Choose 10 as the font size

Choose black as the text color

Un-check Bold or Italic if they are checked

Click Options

6. The Label Options dialog box appears. **Make the following selections and click OK:**



☐ Show duplicate labels
☑ Rotate line labels

Across Layers: 7 (Low)
Within the layer based on: Higher
values of: LENGTH

○ Upper left ● Above ○ Upper right
○ Left ○ Centered ○ Right
○ Lower left ○ Below ○ Lower right

☐ Show Frame

Check Rotate line labels, to make highway names line up with the highway lines

Un-check Show duplicate labels

Leave the Priority settings at their defaults

Choose Above to position the highway labels above the highway line

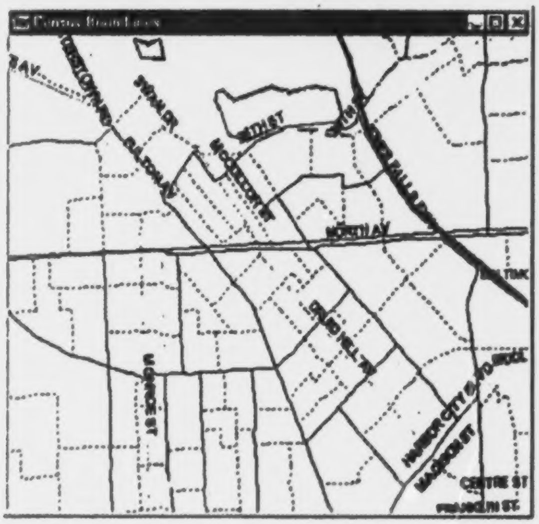
Un-check Show Frame so there will be no boxes around the labels

Click OK

> **TIP**
>
> To create and modify individual labels, use the Manual Labels tool from the main toolbox:
>
> - Choose the working layer for the feature you want to label, then select the Manual Labels tool
> - Click anywhere on the map—the manual label settings dialog box will ask you to describe the label you want. Then close the dialog box.
> - Click on a map feature you want to label; a label will appear.
> - Choose the Pointer tool, then click the label you just created. "Handles" will appear on a frame around the label.
> - Click and drag the handles to re-size or rotate; click inside the handles to re-position; or double-click to change the label's text settings.

7. After clicking OK in the Label Options dialog box, you'll be returned to the Labels dialog box. **Click OK** to close the Labels dialog box.

The local highway names will appear on your map:



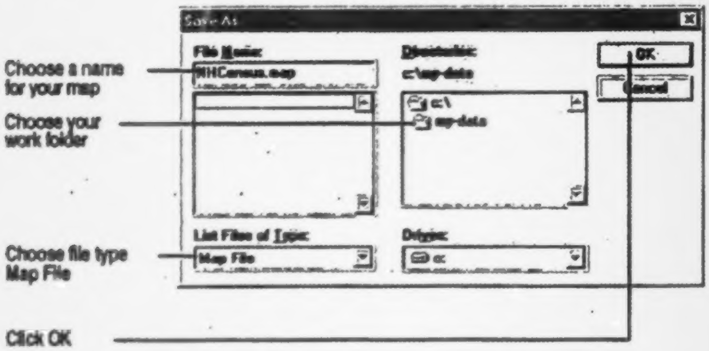
Save Your Map

Now that you've made changes to the Census Boundaries map file, you should save your work.

8. Since Map Library map files (like the Census Boundaries map) can't be deleted or changed, **Select *File – Save As* from the main menu** to save the modified map file under a new name.

   The Save As dialog box appears.

9. **Choose the file type, choose a name and location for your map, and click OK.**



File Name: NHCensus.map

Directories: c:\mp-data

List Files of Type: Map File

Drives: c:

Save As
Choose a name for your map
Choose your work folder
Choose file type Map File
Click OK
c:\
mp-data
OK
Cancel

Note that saving your map file under a new name does not change the name "Census Boundaries" displayed in the title bar of the map window. The two names are separate – you could create several variations of the Census Boundaries map with different file names, but with the same or different title bar names. You'll learn how to change the name displayed in the title bar in Exercise 4.

Turning Layers On and Off

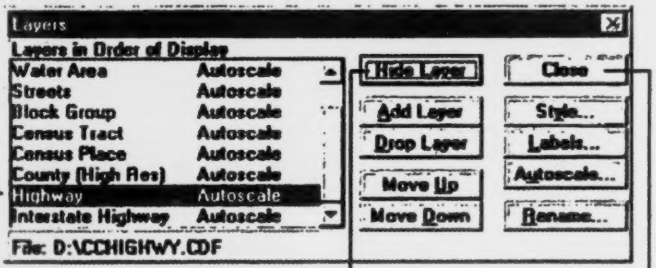
The seven layers that appear in the legend and on the Working Layer menu are not the only layers stored in this map file – they are the only *visible* layers. The software allows you to store many layers with your map file and to modify them as needed.

To illustrate this, the second modification you'll make to the Census Boundaries map is to turn off or "hide" a layer.

TIP
By changing the working layer (as you did in Step 4 above), and clicking the Automatic Labels button, you can turn on labels for the other visible layers shown in the legend. But if you turned on *too* many labels, the map would quickly become unreadable.

10. **Choose *Map - Layers* or click the Map Layers button on the main tool bar.**

The Layers dialog box appears.


Layers
Hide Layer
Add Layer
Drop Layer
Move Up
Move Down
Close
Style...
Labels...
Autoscale...
Rename...

Layers in Order of Display

Water Area	Autoscale
Streets	Autoscale
Block Group	Autoscale
Census Tract	Autoscale
Census Place	Autoscale
County (High Res)	Autoscale
Highway	Autoscale
Interstate Highway	Autoscale

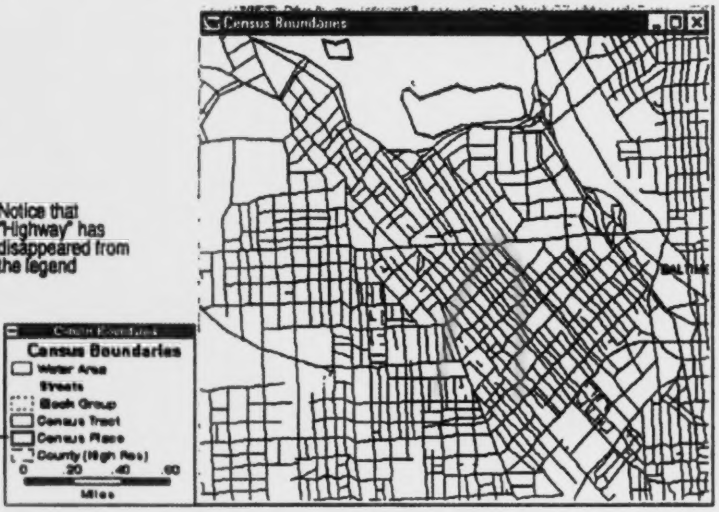
File: D:\CCHIGHWY.CDF

Choose Highway

Click Hide Layer

Click Close

The map is redrawn and highways are no longer visible:


Census Boundaries
Census Boundaries
Water Area
Streets
Block Group
Census Tract
Census Place
County (High Res)
0 .20 .40 .60
Miles

Notice that "Highway" has disappeared from the legend

Changing the Appearance of a Map Layer

Every visible layer in your map has a *style* associated with it. If a layer consists of lines, such as highways or boundaries, the style attributes include the thickness of the line, its color, and whether it is dashed or solid. If a layer consists of areas, such as counties or census tracts, style attributes include the line style for each area's outline, as well as whether the area is filled in with a solid color or hatch marks.

To illustrate this with the Census Boundaries map, you'll make the census tracts boundaries thicker and darker to make them easier to see.

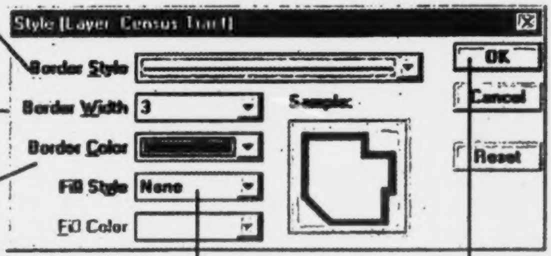
TIP
In the Layers Style dialog box, any fill style or fill color you choose – even white – will obscure features on the layers beneath. If you want to avoid this, select "None" as the fill style.

11. **Change the working layer to Census Tract** by using the pull-down menu in the main tool bar.

12. **Click on the Layer Style button** in the main tool bar.

    The Style dialog box appears. Note that this is the same dialog box that you would have seen if you had clicked the Style button in the Layers dialog box in step 11 above.

13. **Make the following selections from the pull-down menus in the Style dialog box:**



Style [Layer: Census Tract]

Border Style:
Border Width: 3
Border Color:
Fill Style: None
Fill Color:

Choose solid line for Border Style

Choose 3 as the width of your border

Choose black for border color.

Choose None, rather than a color or hatch pattern, as the fill for each census tract area

Click OK

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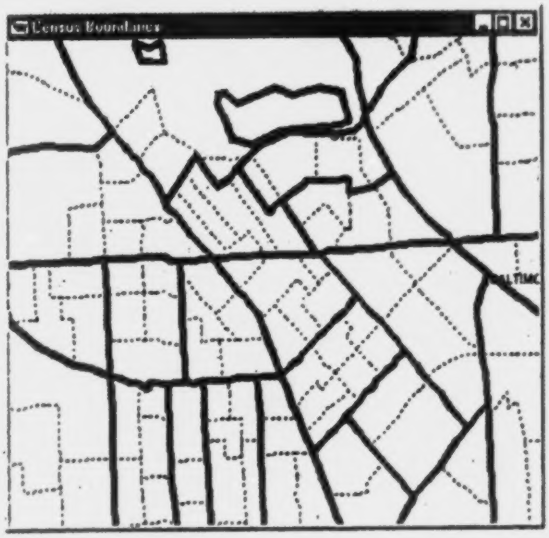
TROUBLESHOOTING TIP
If your attempt to change a layer style doesn't "take," or if the Style dialog box doesn't present you with the appropriate options, you may have forgotten to select the proper *working layer*.

Check the pull-down menu on the main toolbar. It should show the name of the layer that you want to change. If not, select it from the menu and repeat your style change.

Your map should now look like this:



Save Your Changes

14. It is important to save your work frequently. Save your changes to the map file nhcensus.map by **choosing *File – Save*** or by **clicking the Save File button** on the main tool bar.

Wrapping Up

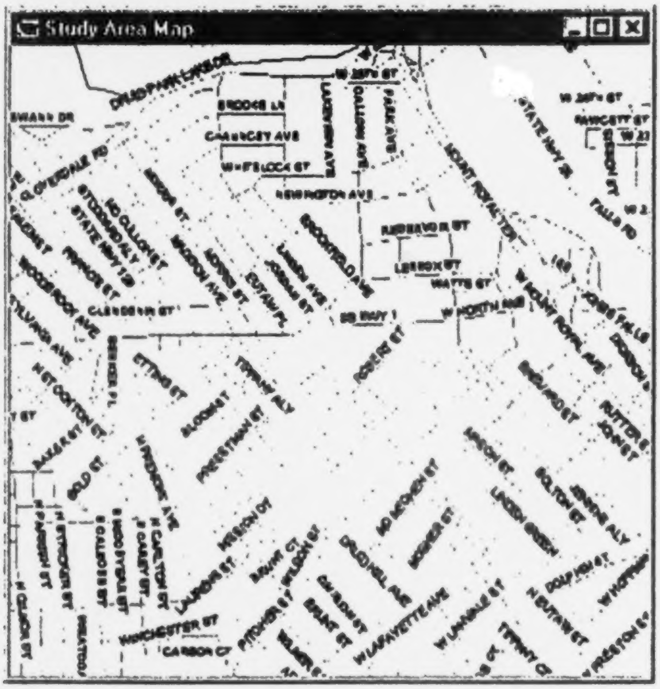
Layer operations such as modifying, creating, and adding layers are key steps in creating your own maps. You've just learned the essentials of layer operations: accessing the Layers dialog box, hiding and showing layers, changing a layer's style, and turning on and off the automatic labels for features in a layer.

In the next exercise you'll learn how to create a layer with your own custom-defined community boundary. In subsequent exercises you'll learn how to add layers from other files and create layers from your own community data.

Exercise 4: Defining Your Own Community Boundary

Introduction

Since your particular community may not share city, county, census tract or other predefined map boundaries, the software lets you define your *own* community area. Your community area can be defined on the basis of streets and landmarks, economic or ethnic patterns, or any other criteria you choose. You can use any of the applicable map layer operations on your custom-defined map area, as well as the visualization, reporting and data analysis tools.



What You will Learn in Exercise 4

This exercise shows step-by-step how to custom-define a map area. You'll learn how to:

- Add a new, blank map layer to an existing Map Library map ("Road Map").
- Use the Map Editing tools to draw the outline of your neighborhood.
- Customize the style (boundary color, thickness, etc.) of your new area.
- Name and save the new *map file,* with your new map layer and all of the original map layers (and their style information) of Road Map.
- Name and save your map layer as a *geographic file*.
- Create a marker of your map.
- Add your map to the Map Library.

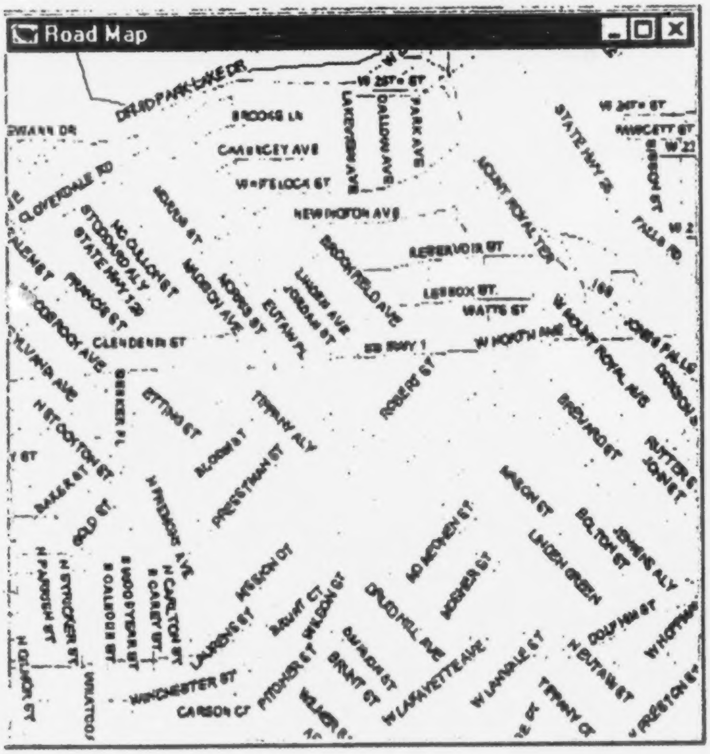
Steps

Getting a Map from the Map Library

1. **Click the Map Library button** in the HUD tool box, and make the following selections in the Map Library dialog box, and click OK:

   Location: My Neighborhood
   Map Category: General Purpose Maps
   Map: Road Map

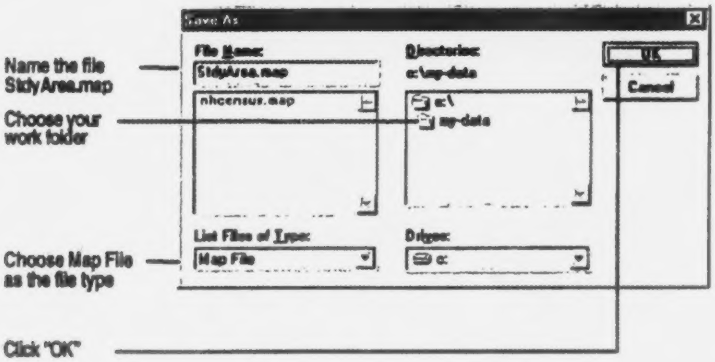
   The Road Map will appear, centered on the My Neighborhood marker location.


Road Map
DRUID PARK LAKE DR
BROOKS LN
PARK AVE
DALLON AVE
STATE HWY 25
CLOVERDALE RD
NEWINGTON AVE
RESERVOIR ST
MOUNT ROYAL TER
FALLS RD
STODDARD ALY
STATE HWY 129
FRANCIS ST
MADISON AVE
NORRIS ST
EUTAW PL
JORDAN ST
LINDEN AVE
BROOKFIELD AVE
WATTS ST
W NORTH AVE
W MOUNT ROYAL AVE
JONES FALLS
CLENDENIN ST
SYLVAN AVE
ETTING ST
TIFFANY ALY
ROBERT ST
BLOOM ST
PRESSTMAN ST
N STOCKTON ST
GOLD ST
N FREMONT AVE
MASON ST
BOLTON ST
LINDEN GREEN
JENKINS ALY
MOSHER ST
DRUID HILL AVE
N CARLTON ST
N CAREY ST
N PARRISH ST
N STRICKER ST
WINCHESTER ST
CARSON CT
BRUNT ST
W LAFAYETTE AVE
W LANVALE ST
TIFFANY CT
N EUTAW ST
PRESTON ST

Saving a Copy of the Road Map

Maps from the Map Library can't be deleted or modified, so next you'll save a copy of the Road Map and modify it.

2. **Choose *File – Save As* from the main menu.** The Save As dialog box will appear.



File Name: StdyArea.map

Directories: c:\my-data

List Files of Type: Map File

Drives: c:

Save As
nhcensus.map
c:\
my-data
OK
Cancel

Name the file StdyArea.map

Choose your work folder

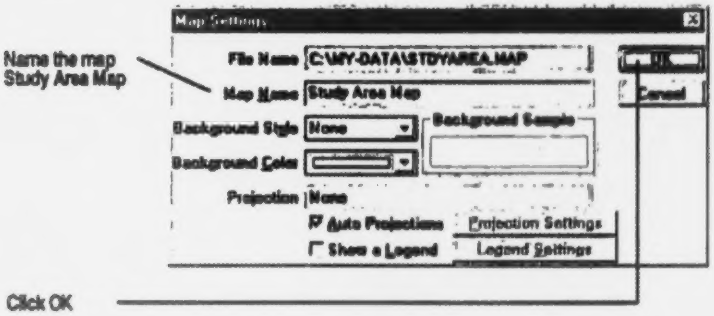
Choose Map File as the file type

Click "OK"

Changing the Name in the Title Bar

Notice that your map window's title bar still reads "Road Map" even though you've just changed the file name to StdyArea.map. This is because the software allows you to give your map a more descriptive name for the map window than an eight-character file name will allow. So next you'll change the name that displays in the title bar of the map window.

3. **Choose *Map – Settings* from the main menu.** The Map Settings dialog box appears.



File Name: C:\MY-DATA\STDYAREA.MAP

Map Name: Study Area Map

Background Style: None

Projection: None

☑ Auto Projections

☐ Show a Legend

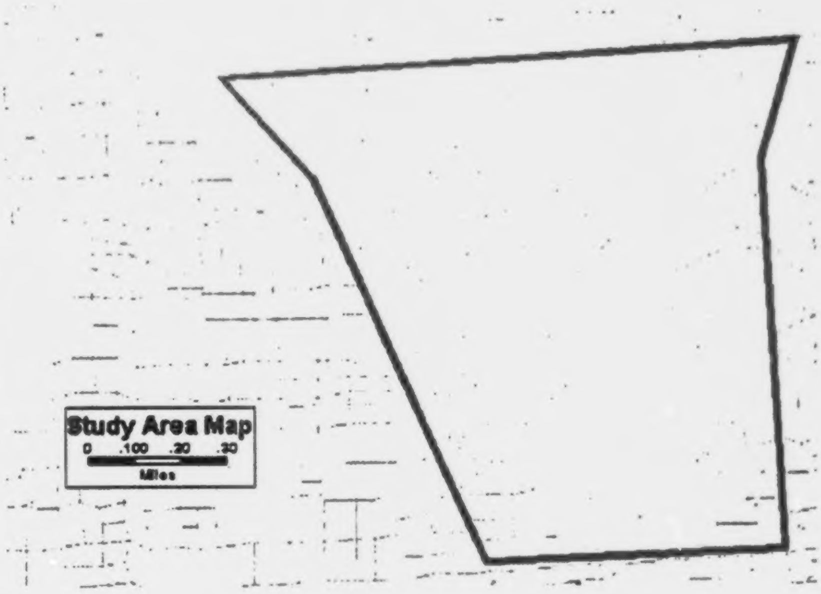
Map Settings
Background Color
Background Sample
Projection Settings
Legend Settings
OK
Cancel

Name the map Study Area Map

Click OK

> **TIP**
> Do you find yourself resetting the legend position each time you open the same map? Here are some legend preferences you can set:
>
> - Using the Map Settings dialog box, check or uncheck the "Show a Legend" box.
> - To set other parameters, such as whether your legend is attached to the map window or is displayed in its own separate window, click the "Legend Settings" button.
> - To move the legend out of the map window, select the pointer tool on the main toolbox, double-click the legend, and select "Separate Window" from the pull-down menu in the Legend dialog box. Or simply click the "Show or Hide the Legend" button .

Your map should now look like this:

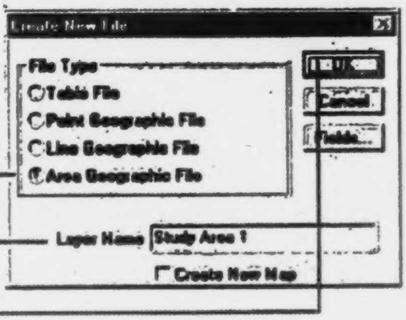

Study Area Map
0 .100 .20 .30
Miles

Creating a New Layer

Next you'll create a new layer in your Study Area Map. You'll define your community area on this layer.

Remember, a layer is simply a geographic file that can be added to a map file. So the first step in creating a new layer in a map is to create a geographic file.

4. **Choose *File – New* from the main menu. The Create New File dialog box appears.**


Create New File
File Type
○ Table File
○ Point Geographic File
○ Line Geographic File
● Area Geographic File
OK
Cancel
Fields...
☐ Create New Map

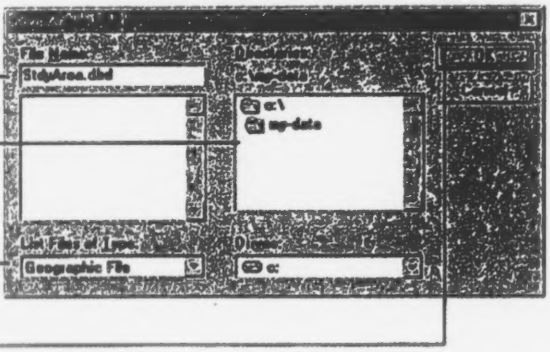
Layer Name: Study Area 1

Choose Area Geographic File as the file type

Name your new layer Study Area 1

Click OK

5. The Save As dialog box will appear. **Save the file in your own directory as follows**:



StdyArea.dbd

Geographic File

c:

Name your file StdyArea.dbd

Choose your work folder

Choose type Geographic

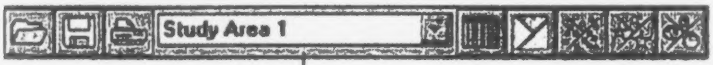
Click OK

A new, blank layer called Study Area 1 is now part of your Study Area Map.

Defining Your Neighborhood Boundary

Your next step will be to define your custom area by drawing its boundaries in the new map layer, Study Area 1. As with any action on a map layer, you must first make sure that the layer you are going to change is the working layer.

6. **Select Study Area 1 from the working** layer pull-down menu on the main tool bar.



Study Area 1

Choose Study Area 1 as the working layer

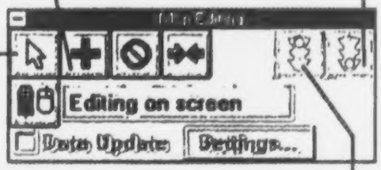
7. To make the study area more visible, **maximize the map window to fill your screen and hide the legend** to give yourself more visible map area. **Use the Pan tool to make sure your map view includes the streets identified in the illustration under Step 9 below.** Finally **click-and-drag the Zoom In tool** around the target area to fill the map window.

8. **Choose *Tools – Map Editing*** from the main menu. The Map Editing tool box will appear. (You may wish to drag the Map Editing tool box to the lower left corner of your screen so it won't be in the way as you draw the study area outline.)

The "Add Area" tool extends your boundary with each mouse click. Double-clicking closes the polygon

The green traffic light ("Save Edits") confirms your map changes

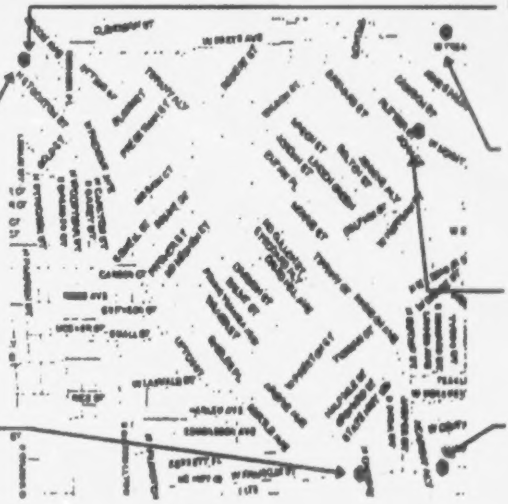
The "Modify Area" tool is used to select and move points and line segments of your area boundary



The red traffic light ("Cancel Edits") "undoes" your last map changes

(Note: The Map Editing tool box may be partially off screen when you first open it. In order to view the whole box, simply click on its blue title bar and drag it toward the center of your screen.)

9. **Click on the Add Area button ⊞.** This tool lets you draw point-by-point area boundaries. **Draw a polygon around your study area by clicking on the points indicated below, and double-clicking on the last point to close the polygon.** (You may want to increase your zoom level to make more individual streets visible.)



1. Start by clicking once at the corner of W North Ave. and Pennsylvania Ave.

2. Click next at the corner of Pennsylvania Ave. and W Franklin St.

3. Click next at the corner of W Franklin St. and N Howard St.

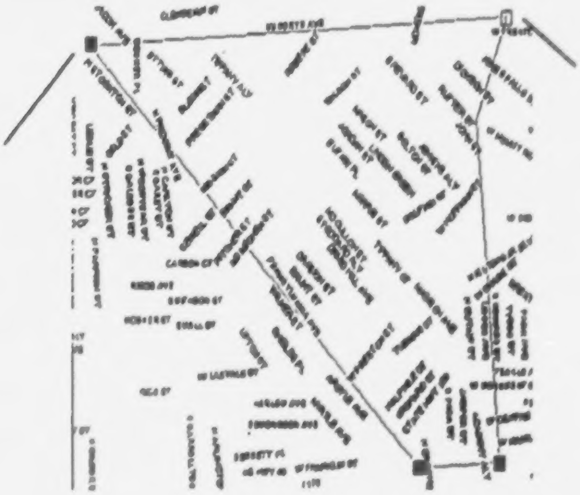
4. Click at N Howard St. and W Mount Royal Ave.

5. Click at N Howard St. and W North Ave.

6. Double-click at your starting point to close the polygon

(Note: You may select any large area to be your study area. That is, you don't have to follow the book's example. Just make sure your area covers several square blocks, because it is relevant in future exercises.)

Your map with the path you have created should now resemble the illustration below (see troubleshooting sidebar at left):



TROUBLESHOOTING TIP
Upon completing your polygon (see illustration at right), the street names appear in light blue, and there should be one open "node" on the polygon you have drawn. This indicates that the polygon is "closed." If an open node doesn't appear, click the Modify Area tool in the Map Editing toolbox, and click a node on the polygon.

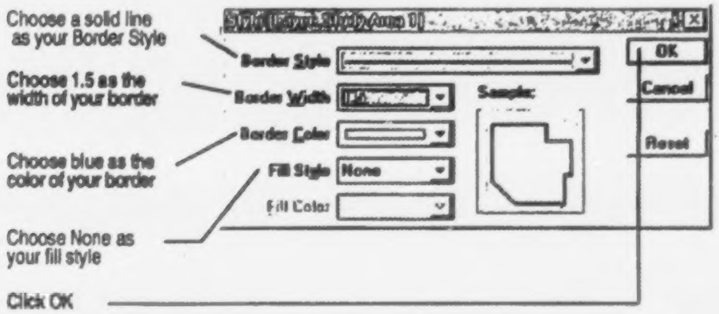
10. **Click the Save Edits button** on the Map Editing toolbox.

    The polygon you have drawn is now a map area in the Study Area 1 map layer.

    Next you'll make the boundaries more visible by modifying the Layer Style.

Changing the Boundary Style

11. **Click the Layer Style button** on the main tool bar. The Layer Style dialog box will appear. Make the following selections:



Fill Style: None

Choose a solid line as your Border Style

Choose 1.5 as the width of your border

Choose blue as the color of your border

Choose None as your fill style

Click OK

Your map should now resemble the illustration below:

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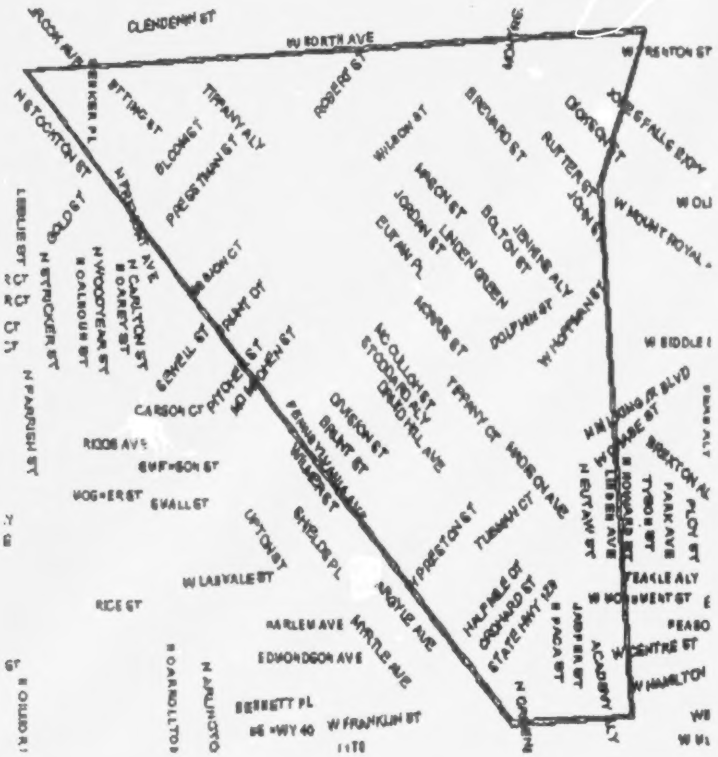

CLENDENIN ST
W NORTH AVE
ROBERT ST
TIFFANY ALY
N FREMONT AVE
PRESSTMAN ST
BLOOM ST
WILSON ST
BRUNSWICK
EDMONDSON AVE
W FRANKLIN ST
N PARRISH ST
RIGGS AVE
CARSON CT
W LAFAYETTE ST
RICE ST
HARLEM AVE
DIVISION ST
MC CULLOH ST
DRUID HILL AVE
MADISON AVE
PENNSYLVANIA AVE
W MOUNT ROYAL AVE
W BIDDLE ST
N EUTAW ST
PARK AVE
W MONUMENT ST
W CENTRE ST
W HAMILTON
N GREENE
BENNETT PL

Save Your Work

12. **Choose *File – Save* from the main menu** or click the Save File button 🖫

    The file **stdyarea.map** now includes the layer Study Area 1, shown as a solid blue line.

Saving Your New Map Layer as a Compact Geographic File

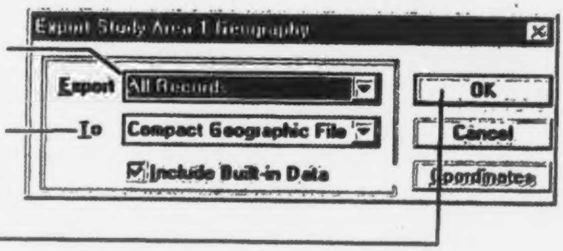
Remember that when you created the Study Area 1 layer in Steps 4 and 5, you saved it as a "standard" geographic file with the ".dbd" suffix. Standard geographic files are editable, which was important when we were about to make changes to the layer.

Now, however, you'll save the layer as a "compact" geographic file with the ".cdf" suffix. Compact geographic files are not editable, but they are very small files and display more quickly on screen.

To save a layer as a geographic file, you have to make the desired layer the working layer, and then "export" the layer as a geographic file.

13. **Select Study Area 1 from the Working Layer** pull-down menu on the main toolbar.

14. Choose *Tools – Export* from the main menu. Make the selections below and click OK.


Export Study Area 1 Geography
OK
Cancel
Coordinates

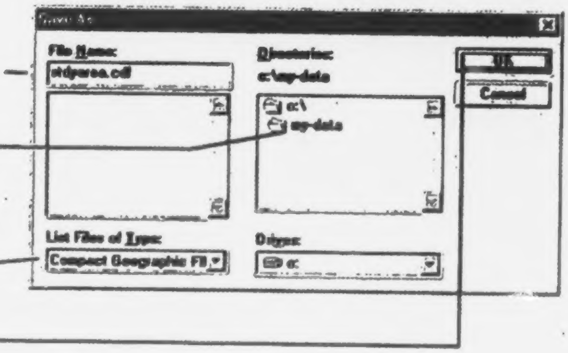
Export: All Records
To: Compact Geographic File
☑ Include Built-in Data

Choose to export All Records

Choose Compact Geographic File

Click OK

15. The Save As dialog box will appear. Name the file and choose a location as shown below:


Save As
OK
Cancel

File Name: stdyarea.cdf
Directories: c:\my-data
c:\
my-data
List Files of Type: Compact Geographic File
Drives: c:

Name your file stdyarea.cdf

Choose your work folder

Choose Compact Geographic File as the file type

Click OK

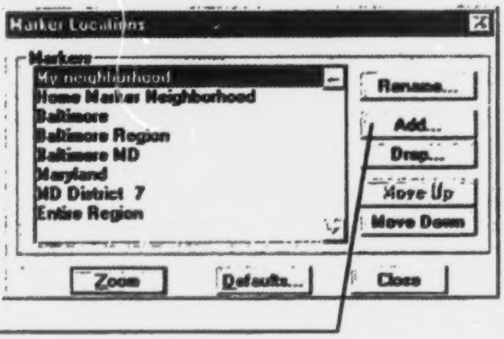
Creating a Marker for the Study Area

Remember that a marker is a way to change your map location instantly from one center point and scale to another—regardless of the map file you are viewing. Your list of Markers is accessible via the Markers command on the main menu and the Markers button in the HUD toolbox.

Next, you'll set a marker for your Study Area.

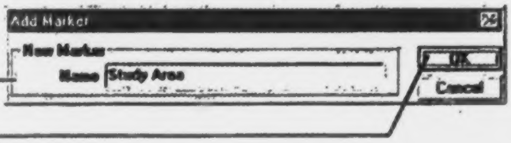
16. **Choose *HUD – Markers*, or click the Markers tool button.**

17. The Marker Locations dialog box appears. **Click the Add button.**


Marker Locations
Markers
My neighborhood
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
MD District 7
Entire Region
Rename...
Add...
Drop...
Move Up
Move Down
Zoom
Defaults...
Close

Click Add

18. The Add Marker dialog box appears. **Enter "Study Area" for the name of your new marker in the Name field then click OK.**

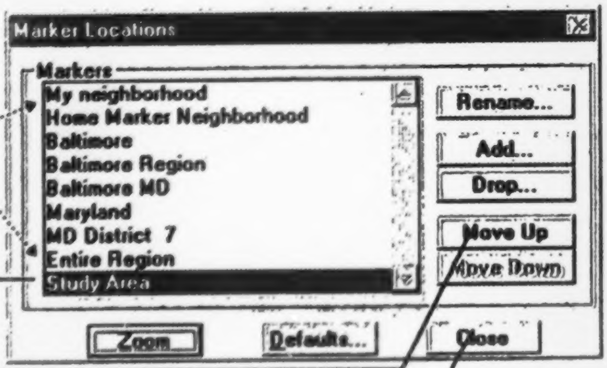

Add Marker
New Marker
OK
Cancel

Name: Study Area

Enter the name Study Area

Click OK

19. When you return to the Marker Locations dialog box, **choose the marker you just added.** For convenience when displaying maps of this location, **move the marker to the top of the list by clicking the Up button about 7 times. Then click Close.**


Marker Locations
Markers
My neighborhood
Home Marker Neighborhood
Baltimore
Baltimore Region
Baltimore MD
Maryland
MD District 7
Entire Region
Study Area
Rename...
Add...
Drop...
Move Up
Move Down
Zoom
Defaults...
Close

To move Study Area from the bottom of the list to the top...

...click once on Study Area...

...then click the Move Up button about 7 times

Click Close

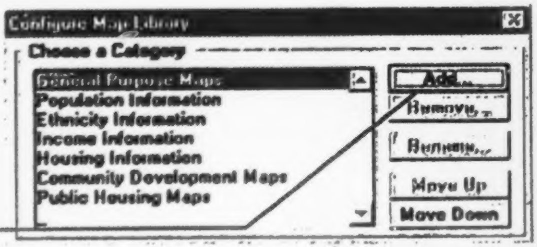
Adding Your Map to the Map Library

You've just created a marker that will shift the map view of *any* map to the Study Area. Next you'll add the Study Area Map itself to the Map Library. First you'll add a new category of Map Library maps called "My Maps." (You can use the new category in the future to organize your own maps in the Map Library.) Then you'll add the Study Area Map to the Map Library in the new category.

20. **Choose *HUD – Map Library* or click the Map Library button**. The Map Library appears (not shown here).

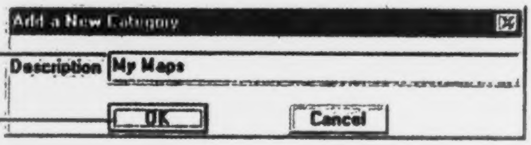
21. In the Map Library dialog box, make sure the Study Area marker, which you created in the previous steps, appears as a Location to Display. **Then click the Content button** at the bottom of the Map Library dialog box.

22. The Configure Map Library dialog box appears. **Click Add.**


Configure Map Library
Choose a Category
General Purpose Maps
Population Information
Ethnicity Information
Income Information
Housing Information
Community Development Maps
Public Housing Maps
Add...
Remove...
Rename...
Move Up
Move Down

Click Add

23. The Add a New Category dialog box appears. **Type in the title "My Maps" in the Description field, then click OK.**


Add a New Category
OK
Cancel

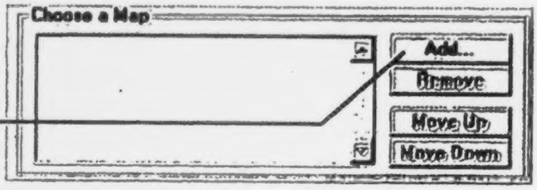
Description: My Maps

Type My Maps

Click OK

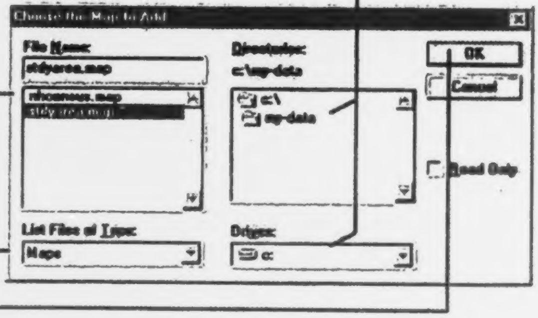
You are returned to the Configure Map Library dialog box. Now that your new map category is available for storing your maps in the Map Library, you will choose your Study Area Map.

24. In the Configure Map Library dialog box, **in the portion of the dialog box labeled "Choose a Map," click Add.**


Choose a Map
Add...
Remove
Move Up
Move Down

Click Add

25. The Choose the Map to Add dialog box appears. **Make the selections indicated below and click OK.**


Choose the Map to Add
OK
Cancel
Read Only
c:\

File Name: stdyarea.map

Directories: c:\mp-data

List Files of Type: Maps

Drives: c:

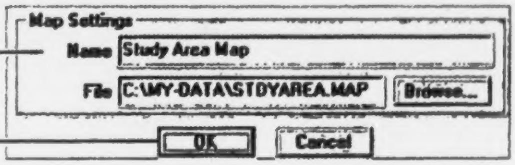
Choose your drive and work file directory

Select stdyarea.map

Choose the Maps file type

Click OK

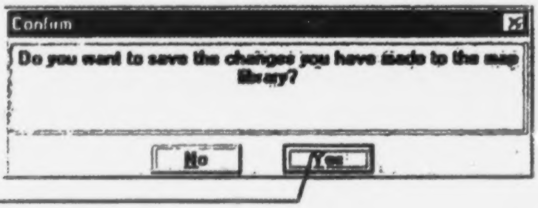
26. After you are returned to the Configure Map Library dialog box, **highlight "New Map" in the Name field under Map Settings. Enter the name "Study Area Map" in the field, then click OK.**


Map Settings
Name: Study Area Map
File: C:\MY-DATA\STDYAREA.MAP

Name your map "Study Area Map"

Click OK

27. When asked to confirm if you want to save the changes you've made to the Map Library, **click Yes.**


Confirm

Do you want to save the changes you have made to the map library?

Click Yes

Wrapping Up

Congratulations: you've created a custom-defined community area that is now a fully functioning layer in your map. And you've saved a version of that map layer that can be added to any map of your community.

Like a county, a city, or any other pre-defined community, your custom-defined community area can be linked to Census, geographic, HUD, or any data that may be relevant to your community.

As you'll see in Chapter 4, the software will even let you add your own data to your custom-defined community—so you can begin to ask questions such as, "How many people live in my community? What are they like? What are their needs?" In later chapters, you'll use the Study Area Map you've created to do just that.

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Chapter Two Summary Exercises

1. You are able to rename your markers. True or False
2. In this chapter, we renamed the __________ marker to __________.
3. You can use the _________ tool to move the map around within the map window.
4. You can add your own maps to the Map Library. True or False
5. Like transparencies, _________ in a map file can be rearranged, added, dropped, renamed, or hidden.
6. List at least three maps and map themes that may be relevant to your work.

CHAPTER

3

Defining My Community's Activities

Introduction

This chapter describes how to look at community development data, and how to show projects on a map. HUD is providing Community 2020 as a way to make its data widely and easily available to grantees and non-grantees. You can look at Metropolitan Community Data and State/Small Cities Project Data on forms, look at project locations on a map, and move between maps and forms to explore projects and their characteristics.

Problem Statement

You have been requested to prepare a presentation of all Fiscal Year 1995 Consolidated Plan projects located in neighborhood "X" for a meeting with council person Smith, State Senator Jones, and Congress person Doe. You have decided to prepare maps to visually show not only the ConPlan projects, but also the public housing developments in the area. Using Community 2020, how do you begin to access the data and prepare the maps?

REQUIREMENTS FOR CHAPTER 3

The exercises in this chapter assume you have read Chapter 1 and performed the exercises in Chapter 2. The exercises you will perform in this chapter will use files and maps you created in Chapter 2.

What You Will Learn in Chapter 3

- In Exercise 1, you will learn how to add the Metropolitan Community Projects layer to your map and how to display Metropolitan Community Project Data from a map.
- In Exercise 2, you will learn how to display all of the projects contained within a Grantee's Consolidated Plan.
- In Exercise 3, you will Learn how to display Public Housing Authority Data and Public Housing Development Data.
- In Exercise 4, you will learn how to display State/Small Cities Project Data.

IN THIS CHAPTER

Introduction..3-1
Exercise 1: Displaying a HUD Project's Information from a Map...3-2
Exercise 2: Displaying a Grantee's Projects.............................3-4
Exercise 3: Public Housing Authorities and Developments...........3-6
Exercise 4: Displaying State/Small Cities Project Data............. 3-12

Exercise 1 Displaying a HUD Project's Information from a Map

Introduction

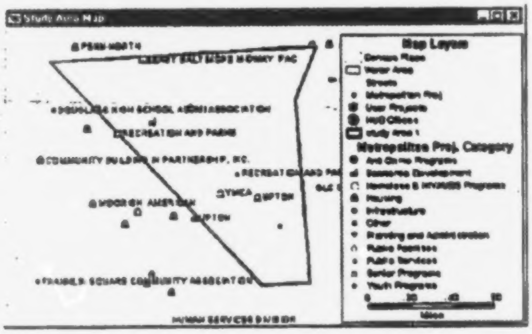
Each grantee's Consolidated Plan contains a five year strategy and an annual Action Plan describing the projects it proposes to carry out with each year's funding. The data for each project includes a project description, the project budget and funding sources, the schedule for completion, and the location of the project. This exercise guides you through the steps to view this information.

Steps

1. **Click the Map Library button , and make the following selection:**

   Location to Display: Study Area
   Map Category: My Maps
   Map: Study Area Map

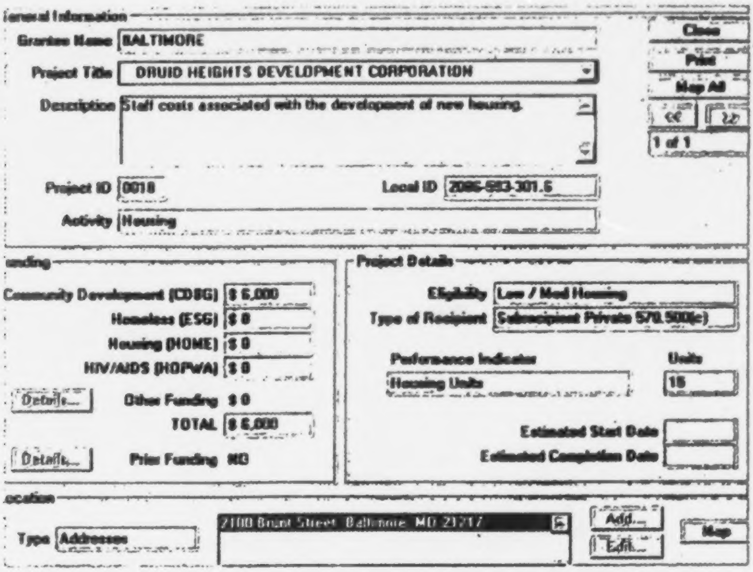
2. **Click the Map Layers button** on the main menu toolbar. **Add the layer projectl.cdf** from the CD-ROM (usually the d:\ drive)


Study Area Map
PENN NORTH
RECREATION AND PARKS
COMMUNITY BUILDING IN PARTNERSHIP, INC.
YMCA
UPTON
HUMAN SERVICES DIVISION
Map Layers
Census Tracts
Water Area
Streets
Metropolitan Proj
User Projects
HUD Offices
Study Area 1
Metropolitan Proj. Category
Anti-Crime Programs
Economic Development
Homeless & HIV/AIDS Programs
Housing
Infrastructure
Other
Planning and Administration
Public Facilities
Public Services
Senior Programs
Youth Programs
0
20
40
60
Miles

3. **Select *File-Save As* from the main menu. Save the map as project.map in C:\my-data .**

4. **Click the Project Info Tool in the HUD toolbox.**

5. **Click one of the metropolitan community projects visible on your map** (The example provided in this manual selects the project that is the farthest west in the study area, i.e. Bloom Street and Pennsylvania Avenue.)



eneral Information

Grantee Name: BALTIMORE

Project Title: DRUID HEIGHTS DEVELOPMENT CORPORATION

Description: Staff costs associated with the development of new housing.

1 of 1

Project ID: 0018

Local ID: 2086-593-301.6

Activity: Housing

unding

Community Development (CDBG): $ 6,000

Homeless (ESG): $ 0

Housing (HOME): $ 0

HIV/AIDS (HOPWA): $ 0

Other Funding: $ 0

TOTAL: $ 6,000

Prior Funding: NO

Project Details

Eligibility: Low / Mod Housing

Type of Recipient: Subrecipient Private 570.500(c)

Performance Indicator	Units
Housing Units	15

Estimated Start Date:

Estimated Completion Date:

ocation

Type: Addresses

2100 Brunt Street, Baltimore, MD 21217

6. This displays the Metropolitan Community Projects dialog box for a proposed project titled Druid Heights Development Corporation. **Select the Map button** at the lower right corner of the dialog box to return to the map with the selected project as the centroid of the re-drawn map. (Note: The Close button would have returned you to the same map that was displayed before you used the Project Info tool. The Map All button shows all the locations selected.)

Exercise 2 Displaying a Grantee's Projects

Introduction

Community 2020 can display all of a grantee's Metropolitan Community projects. You can also opt to view the projects for only certain programs, activities, or both. In this exercise, you will want to determine the number of Consolidated Plan projects located in your community and how much funding each receives.

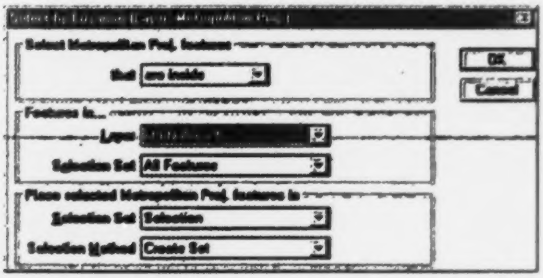
Steps

You should have **project.map** from **C:\My_data** open from the previous exercise. If not, open it now.

1. To select all the HUD Projects in the Study Area, **select Metropolitan Community Projects** as the working layer from the main menu toolbar.

2. Select ***Dataview-Select by Location*** from the main menu.

3. In the resulting dialog box, **select HUD Projects features that are inside the Study Area 1 Layer. Click OK.**



Select Metropolitan Proj. features

that are inside

Features in...

Selection Set All Features

Place selected Metropolitan Proj. features in

Selection Set Selection

Selection Method Create Set

TIP
If you make a mistake with either of the alternatives, simply click on the Clear Selection button, also located in the Maptitude tool box, and try again!

Alternative to Steps 2 and 3:

Click the Select by Shape button in the Maptitude tool box **and draw around the Study Area, double clicking to close the shape.**

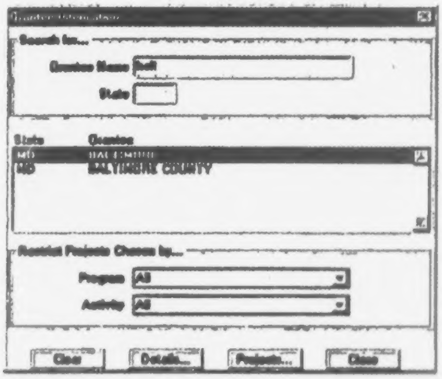
-OR-

Click the Select by Circle button in the Maptitude tool box. **Click on the middle of your study area map and drag the pointer towards the edge of your map.** You should see the outline of a circle following the cursor. **Release the mouse button when you are satisfied with the circle's size.**

4. **Click on the HUD Programs tool** HUD in the HUD tool box. In this example, there are 15 projects within the Study Area. (You can return to the map by clicking on the Close or the Map button as in Exercise 1. You may also click on the Map All button to display the locations of all 15 of the selected projects.)

5. To determine the total number of projects in your Grantee's Consolidated Plan, **click the Grantee Info tool** in the HUD tool box. **Type the first few letters of the Grantee name in the given text box** ("balt" in this case), then **hit TAB or ENTER. Click on the name of the Grantee whose projects you wish to view** (MD Baltimore in this case).

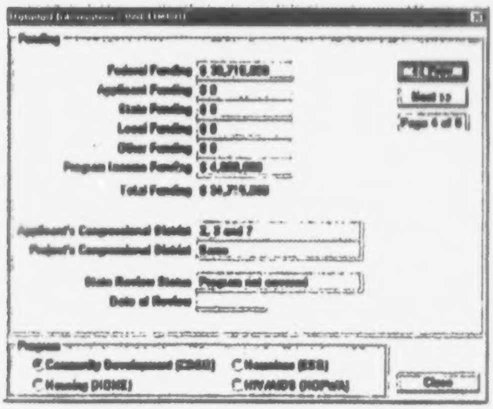
TIP
The Program and Activity pull down menus allow you to limit the projects you view by program (i.e. CDBG), activity (i.e. infrastructure), or both.


Search In...
Grantee Name
State
State
Grantee
MD
MD
BALTIMORE COUNTY
Restrict Projects Chosen by...
Program
Activity
Clear
Details...
Projects...
Close

FYI
To get a hard copy of a Proposed Project Form for a project, simply click the Print button in the upper right corner of the dialog box.

6. In this case, we want to view All of the projects. **Click the Projects... button** and the form for the grantee's first project appears. Looking at the upper right corner reveals that there are 275 proposed projects in the City of Baltimore's Consolidated Plan. **Click the Previous and Next buttons** to scroll through several projects. Next, **click the Close button** to return to the Grantee Information Form.

7. To determine the dollar amount for each of the four programs, begin by **clicking the Details button** in the Grantee Information dialog box. When the Detailed Information dialog box appears, **click Next to move to page 4. Then click on each of the four Program buttons and add the totals.**

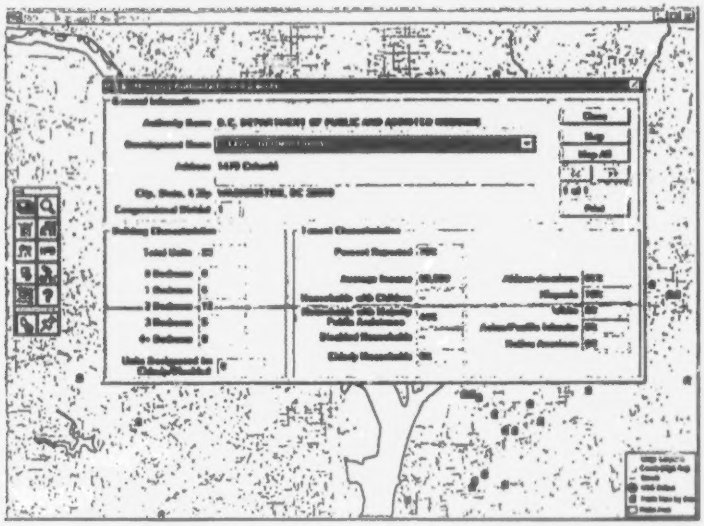

Funding
Federal Funding
Applicant Funding
State Funding
Local Funding
Other Funding
Program Income Funding
Total Funding
Next >>
Applicant's Congressional District
Project's Congressional District
State Review Status
Date of Review
Program
Community Development (CDBG)
Homeless (ESG)
Housing (HOME)
HIV/AIDS (HOPWA)
Close

8. **Click Close** to close the Detailed Information Form. **Click Close** to close the Grantee Information Form.

Exercise 3 : Public Housing Authorities and Developments

Introduction

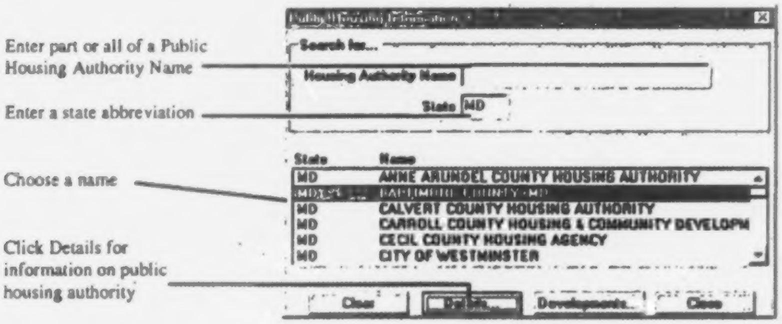
Community 2020 HUD Community Planning Software provides data for Public Housing Authorities (PHAs) and the federal programs they manage. These locally operated PHAs manage a variety of programs to maintain their housing units and to provide services at development sites. These are two major types of programs run by each PHA: the conventional Public Housing Program and the section 8 Program. This exercise shows you how to view these data on forms and maps.



Viewing Public Housing Authority Information

Steps

1. **Choose *HUD- Public Housing Data* from the main menu or click the Public Housing Data tool** in the HUD tool box to display the Public Housing Information form.



State	Name
MD	ANNE ARUNDEL COUNTY HOUSING AUTHORITY
MD	BALTIMORE COUNTY MD
MD	CALVERT COUNTY HOUSING AUTHORITY
MD	CARROLL COUNTY HOUSING & COMMUNITY DEVELOPM
MD	CECIL COUNTY HOUSING AGENCY
MD	CITY OF WESTMINSTER

Enter part or all of a Public Housing Authority Name

Enter a state abbreviation

Choose a name

Click Details for information on public housing authority

2. Search for a Public Housing Authority (PHA) using one of the following methods:

   - To search for a PHA by name, **enter the name of the PHA in the Housing Authority Name edit box.**
   - To search for all PHAs whose names begin with certain letters, **enter one or more of the first letters of the PHA in the Housing Authority Name edit box.**
   - To search for all PHAs in a state, **enter the postal abbreviation for the state in the State edit box.**

3. **Hit the ENTER key.** Community 2020 displays the matching PHA or PHAs. You may enter information in both Housing Authority Name and State edit boxes to narrow your search. To start a new search, click on the Clear button in the dialog box.

4. **Choose a Public Housing Authority from those displayed.**

5. **Click the Details button in the dialog box.** Community 2020 displays the first three pages of Public Housing Authority in the Detailed Information dialog box.

6. If you want to print the information on the Public Housing Authority, **click Print** in the upper right hand corner of the form. A Print Dataview dialog box will appear. **Make any necessary changes for your printer, and click the Print button.**

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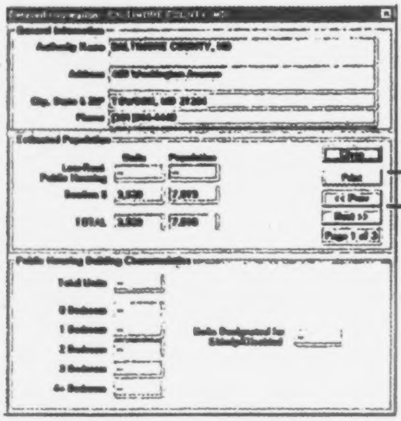


Click to print the

Click to switch among the three pages

7. **Click Close** to close the Detailed Information form.

Viewing Public Housing Development Information

A Public Housing Authority may have one or more Public Housing Developments. Community 2020 lets you look at information about each development on a form and see the locations of all the developments on a Public Housing map. You can also select one or more Public Housing developments from the Public Housing map and pull up the information about them on a form.

8. **Click on the Developments button** on the bottom of the Public Housing Information dialog box.

   (Note: If no developments match your criteria, you will receive a message. To search for a new development, return to the Public Housing Information dialog box and repeat your steps.)

9. **Click on the scroll keys** on the right side of the dialog box to view different projects for the chosen Housing Authority. Note that below the scroll keys, Community 2020 displays the total number of developments for the selected Housing Authority.

10. If you want to print the information about the development, **click the Print button**. Community 2020 displays the Print Dataview dialog box. **Make any necessary changes, then click the Print button.**

Mapping Public Housing Developments

11. You can map the location of the development currently displayed in the form. To do this, you need a map open that contains the Public Housing Development Locations layer (see Tip box to the left). **Click the Map button.** You can also map all of the developments selected. To do this, **click the Map All button.**

Community 2020 automatically adjusts the scale of the map so that the development or developments are visible. Depending on which Public Housing Authorities and developments you choose, this could cover a small area or a very large one.

(Note: If none of the locations of the developments can be mapped, you will receive a message. Community 2020 will return to the Public Housing Authority Developments form.

12. Select ***File-Close All*** from the main menu.

TIP

To open a map containing Public Housing Development data, click the Map Library button in the HUD tool box and open:

Location: My Neighborhood

Category: Public Housing Maps

Map: Public Housing Development Locations

Displaying Data for a Public Housing Development from a map

In the above section, you started with the detailed information of housing developments, and then displayed their location on a map. You can also start from a map, select developments based on their location, and then pull up the detailed information for the chosen developments.

13. **Click the Map Library button** in the HUD tool box. **Select the following map:**

Location: Baltimore
Map Category: Public Housing Maps
Map: Public Housing Development Locations

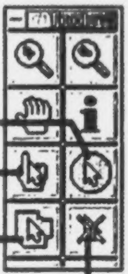
14. **Click on the Project Info tool** in the HUD tool box. **Select a Housing Development icon from the map and click on it once.** The Information dialog box for the selected development will appear. **Click the Close button.**

15. To pull up information for more than one development, you can use the various Select buttons located in the Maptitude tool box. Make sure your working layer is "Public Housing Dev", and **click on one of the following tools:**

- Select by Circle: **Click in between the developments you wish to select. WHILE HOLDING THE MOUSE BUTTON DOWN, drag the cursor past the developments.** You should see an outline of a circle following your cursor. **Release the mouse button**, and all of the developments within the circle will be highlighted red.

FYI

Use one of the following tools to select map features:



Select by Circle

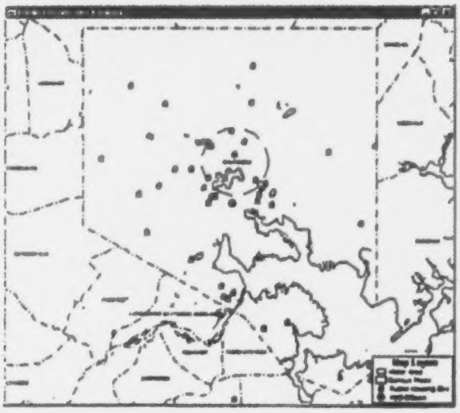
Select by Pointing

Select by Shape

Click on the Clear Selection if you make a mistake

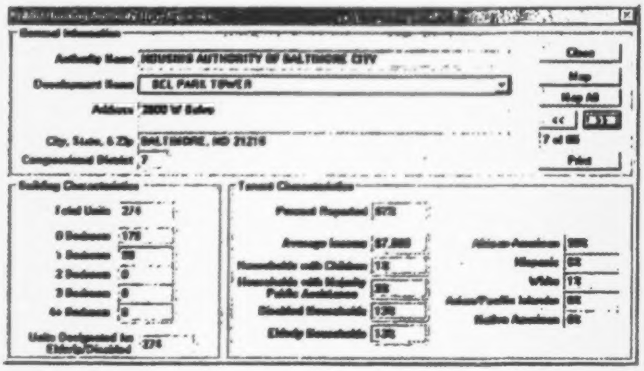
Select by Pointing: There are two methods by which you may use the Select by Pointing tool:

- **Hold down the SHIFT key, and click once on each public housing icon you want to select.** Each one you click will turn red.
- **Click and drag the cursor.** You should see the outline of a rectangle follow your cursor. When the developments you want to select are contained within the rectangle, **release the mouse button**. The selected developments will turn red.
- Select by Shape: **Click once on your map and then move your cursor.** A dotted line should follow your cursor. **Click again to form a corner. Enclose the desired housing development icons within a shape, and double click on your starting point.** The selected developments will turn red.



(Note: If you make a mistake, **click on the Clear Selection tool** in the Maptitude tool box. This will clear the selection and let you start again.)

16. After you have highlighted multiple selections with one of the above methods, **click on the HUD Programs tool** in the HUD tool box. The Public Housing Authority Developments form will appear. **Click on the scroll keys** on the right side of the dialog box to move from one selected project to the next.



17. **Click the Close button** in the dialog box. **Then select** ***File-Close All*** **from the main menu.**

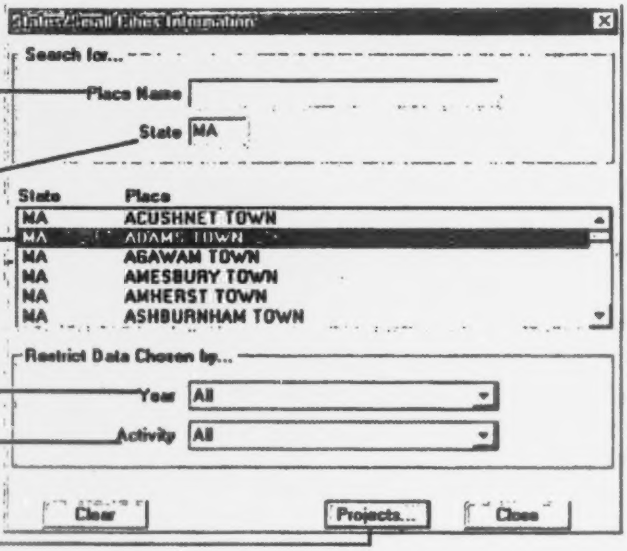
Exercise 4: Displaying State/Small Cities Project Data

State/Small Cities projects are funded by grants to the state government for non-entitlement areas. You can look at the project data on a form for some or all of the projects for one or more non-entitlement areas.

Looking at State/Small Cities Project by Place Name

The non-entitlement areas are identified by place name. You can look at the projects for one or more places. You can also limit the projects to a certain year or activity.

1. **Select *HUD- State/Small Cities Data* from the main menu,** or **click on the State/Small Cities button in the HUD tool box.**



State: MA

State	Place
MA	ACUSHNET TOWN
MA	ADAMS TOWN
MA	AGAWAM TOWN
MA	AMESBURY TOWN
MA	AMHERST TOWN
MA	ASHBURNHAM TOWN

Year: All

Activity: All

Enter part or all of a non entitlement area place name
-OR-
Enter a state abbreviation

Select a non entitlement area

Select data for all years or an individual year

Select individual or all activities

Click Projects...

2. Search for and select a non-entitlement area with one of the following methods:

   - To search for a non-entitlement place by name, **enter the place name of the non-entitlement area in the Place Name edit box.**

   - To search for all non-entitlement areas whose place names begin with certain letters, **enter the first few letters of the name in the Place Name box** (e.g. "Balt" for Baltimore).

TIP

To choose several items in a list:

- Click on an item to choose it
- Drag to choose a group of items
- Click and Ctrl-Click to choose items separated in a list.

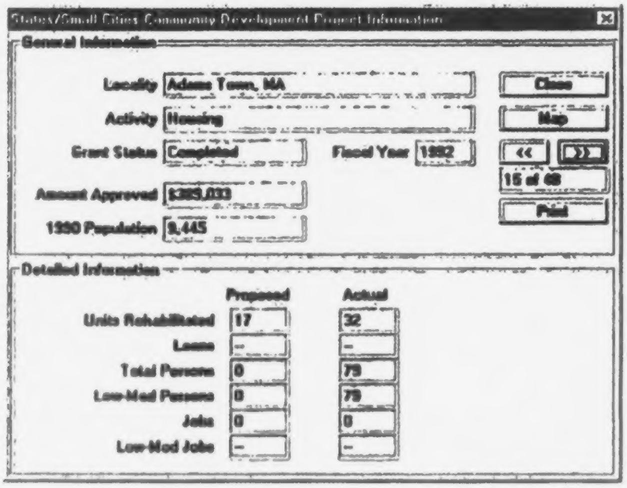
- To search for all non-entitlement areas within a state, **enter the postal abbreviation for the state in the State Name box.**

3. **Press the ENTER key.** Community 2020 displays the non-entitlement areas that meet your search criteria. You can enter information in both Place Name and State name to narrow your search. To start a new search, click the Clear button in the lower left of the dialog box.

4. **Select one or more of the displayed place names.** The chosen names will be highlighted.

5. You now have the option to limit your search even further. **Click on the text boxes to the right of Year and Activity, and make a selection from the resulting drop down menus.** If you do not want to further limit your search, you may select ALL.

6. **Click the Projects... button** on the bottom of the dialog box. Community 2020 will display the State/Small Cities Community Development Project Information box.



States/Small Cities Community Development Project Information
General Information
Close
Map
<<
>>
Print
Detailed Information

Locality: Adams Town, MA

Activity: Housing

Grant Status: Completed

Fiscal Year: 1992

Amount Approved: $385,033

1990 Population: 9,445

15 of 68

	Proposed	Actual
Units Rehabilitated	17	32
Loans	–	–
Total Persons	0	79
Low-Mod Persons	0	79
Jobs	0	0
Low-Mod Jobs	–	–

(Note: If no projects match your criteria, you will receive a message. You can return to the previous dialog box and to begin a new query.)

7. If you want to print the displayed project, **click the Print button** located in the upper right hand corner of the dialog box.

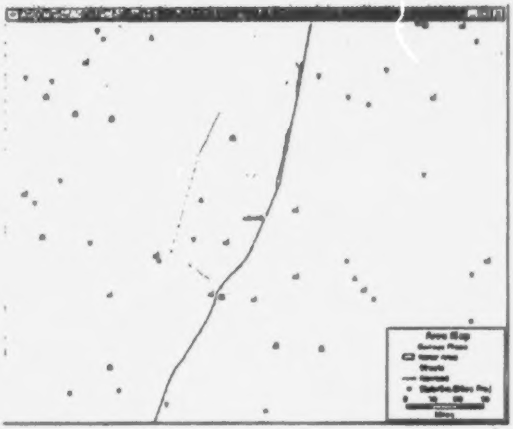
Mapping State/Small Cities Project Developments

TIP

To open a map containing State/Small Cities data, click the Map Library button in the HUD tool box and open:

Location:	Allegany Co, MD
Category:	Community Development
Map:	Metropolitan and State Small Cities Projects

1. You can map the location of the development currently displayed in the form. To do this, you need a map open that contains the State\Small Cities Project layer (see Tip box to the left). **Click the Map button.** You can also map all of the developments selected. To do this, **click the Map All button.**



Community 2020 automatically adjusts the scale of the map so that the development or developments are visible.

(Note: If none of the locations of the developments can be mapped, you will receive a message. Community 2020 will return to the Public Housing Authority Developments form.

2. **Select *File-Close All* from the main menu.**

Displaying Data for a State/Small Cities Project Development from a map

In the above section, you started with the detailed information of housing developments, and then displayed their location on a map. You can also start from a map, select developments based on their location, and then pull up the detailed information for the chosen developments.

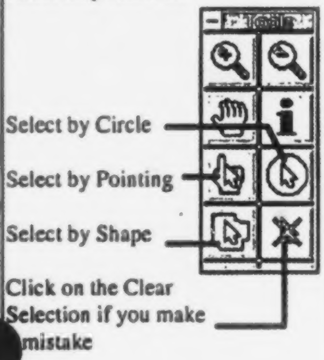
3. **Click the Map Library button** in the HUD tool box. **Select the following map:**

    Location: Other Location
    Map Category: Community Development Maps
    Map: State/Small Cities Projects

4. **Select Counties** and **type "Allegany MD"** in the resulting Find dialog box. **Click OK.**

FYI

Use one of the following tools to select map features:



5. To pull up information about a single project, **Click on the Project Info tool** in the HUD tool box. **Select a project icon from the map and click on it once.** The Information dialog box for the selected development will appear. **Click the Close button.**

6. To pull up information for more than one project, you can use the various Select buttons located on the Maptitude tool box. Make sure your working layer is "State/Sm. Cities Proj", and **click on one of the following tools:**

   - Select by Circle: **Click in between the projects you wish to select. WHILE HOLDING THE MOUSE BUTTON DOWN, drag the cursor past the projects.** You should see an outline of a circle following your cursor. **Release the mouse button**, and all of the projects within the circle will be highlighted red.

   Select by Pointing: There are two methods by which you may use the Select by Pointing tool:

   - **Click on a single project** to select it, then **hold down the SHIFT key**, and **click once on each additional project** you want to select. Each one you click will turn red.

   - **Click and drag the cursor**. You should see the outline of a rectangle follow your cursor. When the projects you want to select are contained within the rectangle, **release the mouse button**. The selected projects will turn red.

   - Select by Shape: **Click once on your map** and then **move your cursor**. A dotted line should follow your cursor. **Click again** to form a corner. **Enclose the desired project icons within a shape, and double click on your starting point**. The selected projects will turn red.

   (Note: If you make a mistake, **click on the Clear Selection tool** in the Maptitude toolbox. This will clear the selection and let you start again.)

7. After you have highlighted multiple selections with one of the above methods, **click on the HUD Programs tool** in the HUD tool box. The State/Small City Community Development Project Information form will appear. **Click on the scroll keys** on the right side of the dialog box to move from one selected project to the next.

8. **Click the Close button** in the dialog box. Then **select *File-Close All*** from the main menu.

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Wrapping Up

Congratulations, you have just learned how to add the HUD-related layers (Metropolitan Projects, Public Housing, and State/Small Cities) to a map. You now also know how to access the information behind these layers.

Chapter Three Summary Questions

1. You are able to access information on all of a grantee's ConPlan projects. True or False

2. In order to display data for a Metropolitan Community project(s) when working from a project map, you would select an icon on the map and click on the ________ button; or select several icons and click on the ________ button.

3. There are several tools to select map features located in the Maptitude tool box. Name two of them.

4. The Public Housing Information Form will let you access only the details on the public housing developments. True or False

CHAPTER

4

Identifying Available Resources

REQUIREMENTS FOR CHAPTER 4:

The exercises in this chapter assume you have read Chapter 1 and performed the exercises in Chapter 2. The exercises that you will perform in this chapter use files and maps you created in Chapter 2.

Introduction

Although Community 2020 contains numerous data from the U.S. Census, you may want to add some information of your own. You can import anything from retail sales figures to crime statistics, and graphically represent these in your maps. The software is compatible with most name brand database programs, such as Lotus, FoxPro, and Microsoft Access. This makes importing your existing data easy and hassle free.

Problem Statement

The maps that you created highlighting the social, economic, and demographic characteristics of neighborhood "X" were a great success at the meeting. In fact, several attendees requested a printed copy of not only the information, but also the maps. You speed back to your office to run off 30 copies of the presentation. While waiting at the copy machine, your boss pops in and tells you to add some additional local housing data to the maps first. This information is not contained in the Community 2020 software. How do you quickly add this data and make the changes before the meeting ends?

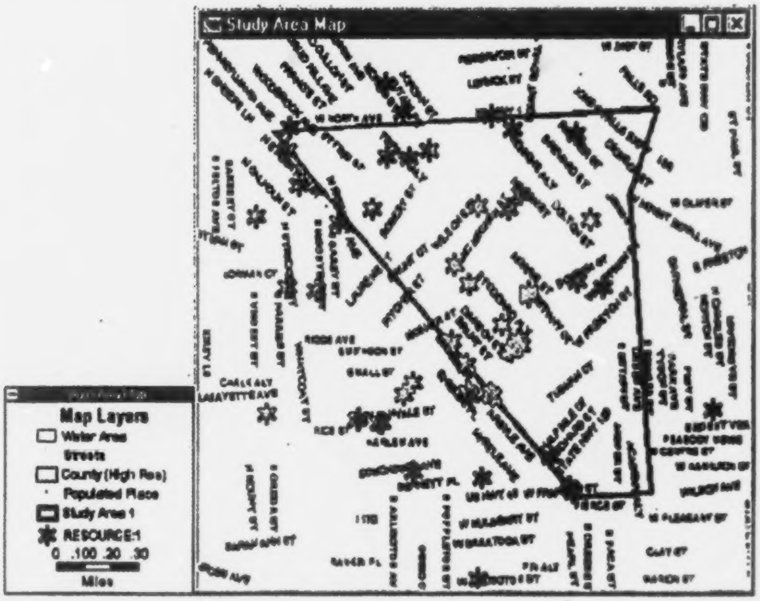
What You Will Learn in Chapter 4

- In Exercise 1 you'll learn how to go beyond the information built into the software. You'll learn how to create a new map layer from your own database file of local community information, and use this new layer to display alternative local resources on your map.
- In Exercise 2 you'll learn how to make your map more clear and persuasive by customizing the map's graphical presentation and legend.

In This Chapter

Introduction 4-1
Exercise 1: Adding Local Resources to Your Map 4-2
Exercise 2: Customizing Your Housing Resources Map 4-12

Exercise 1: Adding Local Resources to Your Map


Study Area Map
Map Layers
Water Area
Streets
County (High Res)
Populated Place
Study Area 1
RESOURCE:1
0 .100 .20 .30
Miles

What You Will Learn in Exercise 1

This exercise will guide you through the process of opening a table of local resources, making changes to the table from within the software, and linking the table to your community map. You'll learn how to:

- Save your table in a file format that the software can open.
- View and make changes to your data in a table.
- Turn your data file into a map layer. Each resource location in the table appears as an icon in the new map layer; this layer can be added to any map.

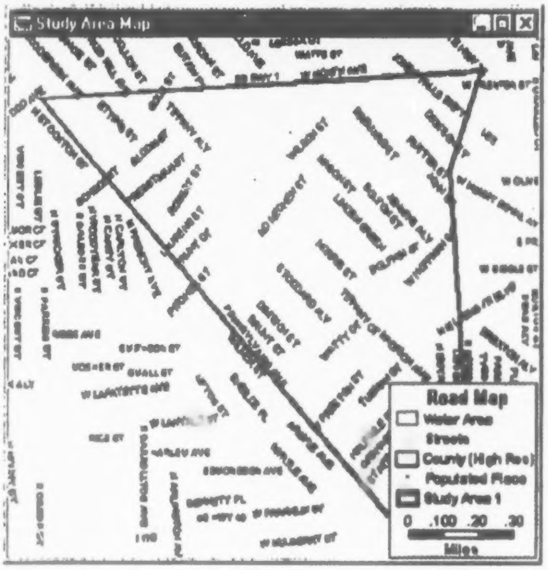
Steps

Before you can incorporate your housing resource information in a map, you first need to open a map. You'll begin by opening the Study Area Map that you created and saved in Chapter 2, Exercise 4.

Opening the Study Area Map

1. **Open the Study Area Map from the Map Library.**

   The Study Area Map will appear:



Opening Your Database File as a Table

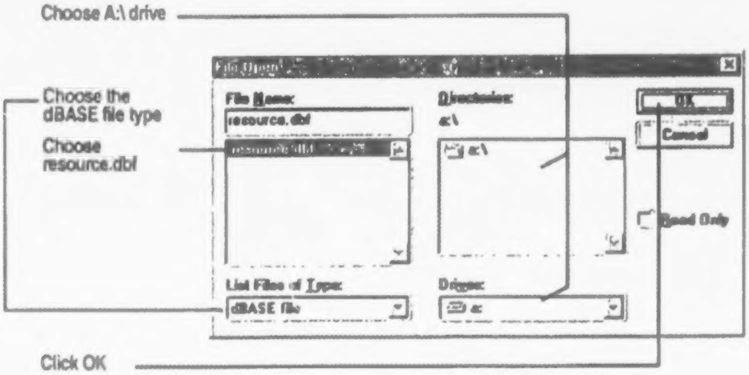
The next step will be to open the file containing the table of local resources as a "dataview" in the software. You can view and change just about any data in a table, whether it was stored in a spreadsheet or a data base. The only requirement is that it be saved in a certain format, called a dBASE file (i.e., a file with the suffix ".dbf"). This is a file format option in most spreadsheet programs such as Microsoft Excel™ or Lotus 1-2-3™.

The software also lets you create a map layer out of a data base file that contains addresses. This chapter guides you through the steps to open your file of local resources as a dataview in the software, then to use the table's address information to create a map layer.

DEFINITION

Points:
Points are one of three types of map features—*points*, *lines* and *areas*. Examples of point features are hospitals, airports, and places of worship.

2. Choose *File – Open*. The File Open dialog box appears. **Make the following selections in this order: Drive, Directory, List Files of Type, File Name.**



Choose A:\ drive

Choose the dBASE file type

Choose resource.dbf

Click OK

File Name: resource.dbf

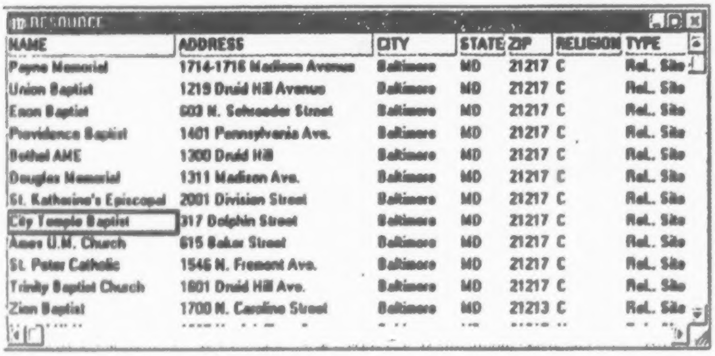
Directories: a:\

List Files of Type: dBASE file

Drives: a:

The RESOURCE Dataview window appears:

TIP
To view more of your table on screen, you can resize the column widths by clicking and dragging the gaps between column headings.



NAME	ADDRESS	CITY	STATE	ZIP	RELIGION	TYPE
Payne Memorial	1714-1716 Madison Avenue	Baltimore	MD	21217	C	Rel.. Site
Union Baptist	1219 Druid Hill Avenue	Baltimore	MD	21217	C	Rel.. Site
Enon Baptist	603 N. Schroeder Street	Baltimore	MD	21217	C	Rel.. Site
Providence Baptist	1401 Pennsylvania Ave.	Baltimore	MD	21217	C	Rel.. Site
Bethel AME	1300 Druid Hill	Baltimore	MD	21217	C	Rel.. Site
Douglas Memorial	1311 Madison Ave.	Baltimore	MD	21217	C	Rel.. Site
St. Katherine's Episcopal	2001 Division Street	Baltimore	MD	21217	C	Rel.. Site
City Temple Baptist	317 Dolphin Street	Baltimore	MD	21217	C	Rel.. Site
Ames U.M. Church	615 Baker Street	Baltimore	MD	21217	C	Rel.. Site
St. Peter Catholic	1546 N. Fremont Ave.	Baltimore	MD	21217	C	Rel.. Site
Trinity Baptist Church	1801 Druid Hill Ave.	Baltimore	MD	21217	C	Rel.. Site
Zion Baptist	1700 N. Caroline Street	Baltimore	MD	21213	C	Rel.. Site

Preparing Your Table

Now that you've opened the housing resource table as a database file in the software, the addresses are almost ready to be "geocoded" as points. Geocoding simply refers to the process of matching each address in your table to a location and assigning latitude and longitude, so that the software can display a map feature at each location.

This process requires two pieces of information for each resource in the table:

- **Geographic location.** Either an address, or latitude and longitude. As you can see, the resource table already has address information.
- **A unique identifier.** The software has to keep each record in a table distinct from the others, so it needs a unique ID or serial number. But since the housing resource entries don't have unique identifiers, you'll have to add one to each. Fortunately, the software makes this easy to do.

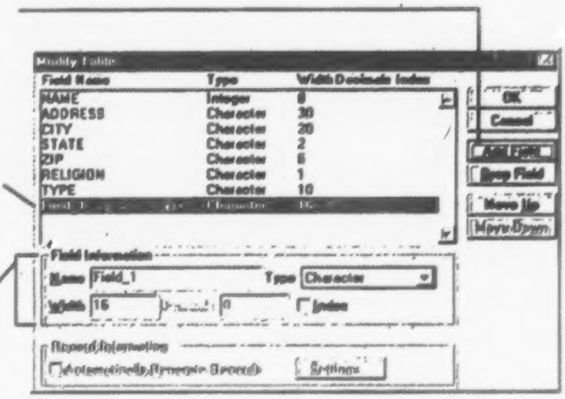
Adding a Unique ID to Your Table

There are a number of ways to add unique identifiers to your table. In the next few steps, you'll add a column of sequential numbers (1, 2, 3, etc.) to your table, so that each housing resource has its own unique number.

TROUBLESHOOTING TIP
To use the Modify Table button, you must (1) have a table open in a dataview, and (2) the table must not be in use by an open map.

3. **Choose *Dataview – Modify Table*** on the main menu.

4. The Modify Table dialog box appears. **Click the Add Field button.**



Click the Add Field button

Notice that "Field_1" appears after you click the Add Field button

This is the default field information; you'll change these in the next step

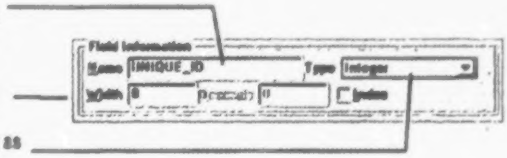
Modify Table

Field Name	Type	Width	Decimals	Index
NAME	Integer	8		
ADDRESS	Character	30		
CITY	Character	20		
STATE	Character	2		
ZIP	Character	5		
RELIGION	Character	1		
TYPE	Character	10		
Field_1	Character	16		

Field Information
Name: Field_1 Type: Character
Width: 16 Decimals: 0 ☐ Index

Record Information
☐ Automatically Generate Record

5. In the lower portion of the Modify Table dialog box, **enter the Field Information as shown below.**



Enter UNIQUE_ID as the field name

Enter 8 as the field width

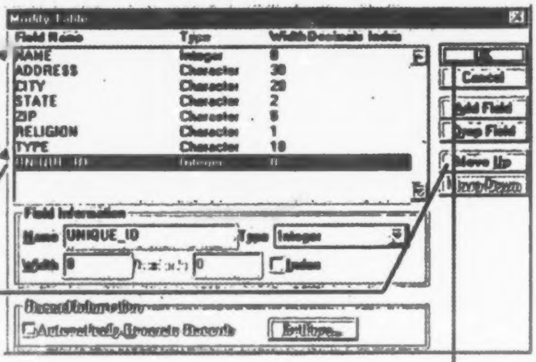
Choose Integer as the field type

Field Information
Name: UNIQUE_ID Type: Integer
Width: 8 Precision: 0 ☐ Index

You're almost finished — but don't click OK just yet. In this exercise, you'll want to see your new column on the immediate left of the Dataview table. To do this, the UNIQUE_ID field has to be at the top of the list in the Modify Table dialog box.

But as you can see, UNIQUE_ID is at the bottom of the Field Name list. To remedy this, we'll use the Move Up button.

6. Make sure the UNIQUE_ID field is highlighted, then **click the Move Up button** until the UNIQUE_ID field is repositioned to the top of the list.



Field Name	Type	Width	Decimals	Index
NAME	Integer	8		
ADDRESS	Character	30		
CITY	Character	20		
STATE	Character	2		
ZIP	Character	5		
RELIGION	Character	1		
TYPE	Character	10		
UNIQUE_ID	Integer	8		

Name: UNIQUE_ID
Type: Integer
Width: 8
Decimals: 0
☐ Index

To move UNIQUE_ID from the bottom of the list to the top...

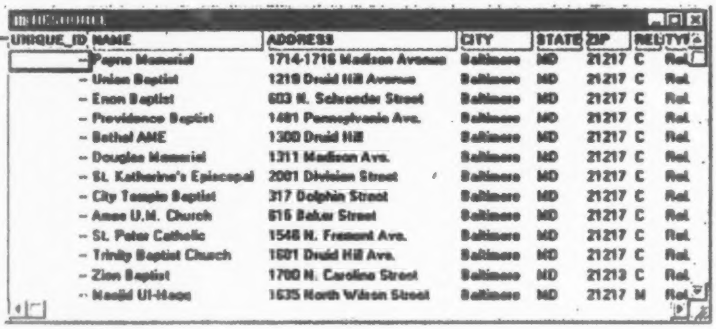
...click once on UNIQUE_ID...

...then click the Move Up button until the name is moved to the top of the list

Click OK

The RESOURCE dataview now displays the UNIQUE_ID column that you just added to the left side of the table.

As you can see, although there is a column to show each resource's unique ID, there are no ID numbers in the column. The software allows you to enter the values manually, but there is an easier way: the Fill command. The Fill command will automatically generate ID numbers for each resource.

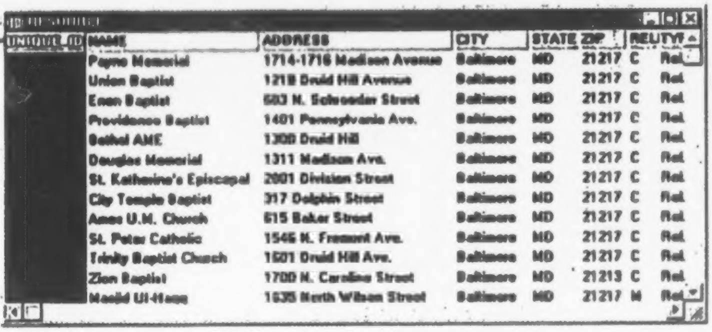


The new UNIQUE_ID column

UNIQUE_ID	NAME	ADDRESS	CITY	STATE	ZIP	REL	TYPE
–	Payne Memorial	1714-1716 Madison Avenue	Baltimore	MD	21217	C	Rel.
–	Union Baptist	1219 Druid Hill Avenue	Baltimore	MD	21217	C	Rel.
–	Enon Baptist	603 N. Schroeder Street	Baltimore	MD	21217	C	Rel.
–	Providence Baptist	1401 Pennsylvania Ave.	Baltimore	MD	21217	C	Rel.
–	Bethel AME	1300 Druid Hill	Baltimore	MD	21217	C	Rel.
–	Douglas Memorial	1311 Madison Ave.	Baltimore	MD	21217	C	Rel.
–	St. Katherine's Episcopal	2001 Division Street	Baltimore	MD	21217	C	Rel.
–	City Temple Baptist	317 Dolphin Street	Baltimore	MD	21217	C	Rel.
–	Ames U.M. Church	615 Baker Street	Baltimore	MD	21217	C	Rel.
–	St. Peter Catholic	1546 N. Fremont Ave.	Baltimore	MD	21217	C	Rel.
–	Trinity Baptist Church	1601 Druid Hill Ave.	Baltimore	MD	21217	C	Rel.
–	Zion Baptist	1700 N. Caroline Street	Baltimore	MD	21213	C	Rel.
–	Masjid Ul-Haqq	1635 North Wilson Street	Baltimore	MD	21217	M	Rel.

72

7. **First select Unique ID column:**

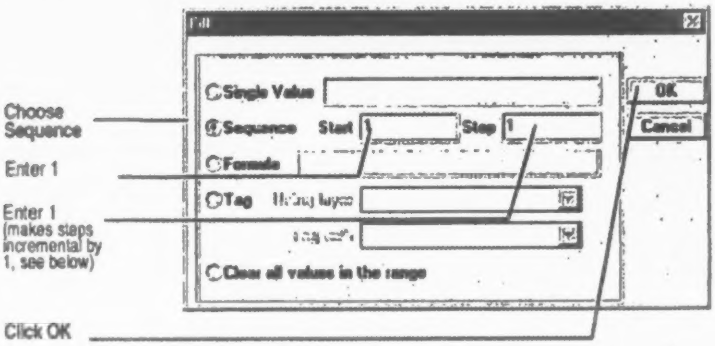


Click Unique ID to select column

UNIQUE_ID	NAME	ADDRESS	CITY	STATE	ZIP	REL	TYP
	Payne Memorial	1714-1716 Madison Avenue	Baltimore	MD	21217	C	Rel
	Union Baptist	1219 Druid Hill Avenue	Baltimore	MD	21217	C	Rel
	Enon Baptist	603 N. Schroeder Street	Baltimore	MD	21217	C	Rel
	Providence Baptist	1401 Pennsylvania Ave.	Baltimore	MD	21217	C	Rel
	Bethel AME	1300 Druid Hill	Baltimore	MD	21217	C	Rel
	Douglas Memorial	1311 Madison Ave.	Baltimore	MD	21217	C	Rel
	St. Katherine's Episcopal	2001 Division Street	Baltimore	MD	21217	C	Rel
	City Temple Baptist	317 Dolphin Street	Baltimore	MD	21217	C	Rel
	Amos U.M. Church	615 Baker Street	Baltimore	MD	21217	C	Rel
	St. Peter Catholic	1546 N. Fremont Ave.	Baltimore	MD	21217	C	Rel
	Trinity Baptist Church	1601 Druid Hill Ave.	Baltimore	MD	21217	C	Rel
	Zion Baptist	1700 N. Caroline Street	Baltimore	MD	21213	C	Rel
	Masjid Ul-Haqq	1635 North Wilson Street	Baltimore	MD	21217	M	Rel

8. Choose *Edit – Fill.*

The Fill dialog box appears and presents options for your column settings. Make the selections below and **click OK.**



○ Single Value

● Sequence Start 1 Step 1

○ Formula

○ Tag

○ Clear all values in the range

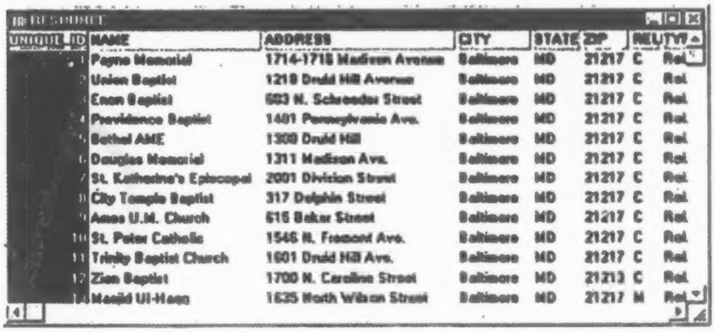
Choose Sequence

Enter 1

Enter 1 (makes steps incremental by 1, see below)

Click OK

Note that each record now has a unique ID number:



UNIQUE_ID	NAME	ADDRESS	CITY	STATE	ZIP	REL	TYP
1	Payne Memorial	1714-1716 Madison Avenue	Baltimore	MD	21217	C	Rel
2	Union Baptist	1219 Druid Hill Avenue	Baltimore	MD	21217	C	Rel
3	Enon Baptist	603 N. Schroeder Street	Baltimore	MD	21217	C	Rel
4	Providence Baptist	1401 Pennsylvania Ave.	Baltimore	MD	21217	C	Rel
5	Bethel AME	1300 Druid Hill	Baltimore	MD	21217	C	Rel
6	Douglas Memorial	1311 Madison Ave.	Baltimore	MD	21217	C	Rel
7	St. Katherine's Episcopal	2001 Division Street	Baltimore	MD	21217	C	Rel
8	City Temple Baptist	317 Dolphin Street	Baltimore	MD	21217	C	Rel
9	Amos U.M. Church	615 Baker Street	Baltimore	MD	21217	C	Rel
10	St. Peter Catholic	1546 N. Fremont Ave.	Baltimore	MD	21217	C	Rel
11	Trinity Baptist Church	1601 Druid Hill Ave.	Baltimore	MD	21217	C	Rel
12	Zion Baptist	1700 N. Caroline Street	Baltimore	MD	21213	C	Rel
13	Masjid Ul-Haqq	1635 North Wilson Street	Baltimore	MD	21217	M	Rel

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Creating a Map Layer by "Geocoding" Your Table

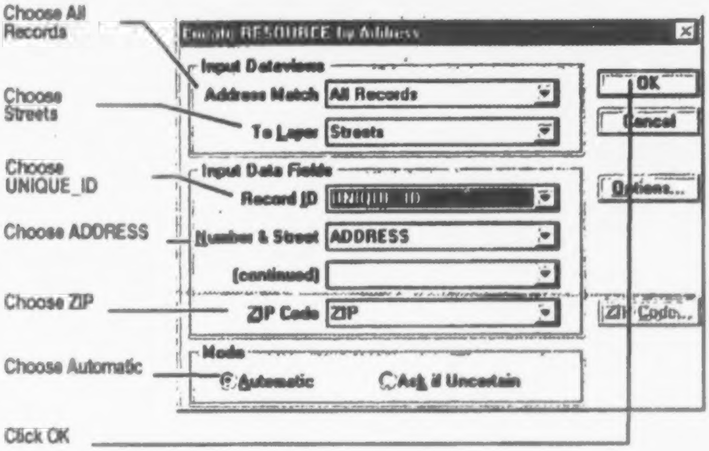
DEFINITION
Feature:
A point, line or area on your map. A point feature, such as a hospital, is typically represented by a symbol. Lines, such as streets, are colored and solid or dashed. Areas, such as counties, may have boundary lines and be filled with a color or pattern such as hatch marks.

Now you're ready to "geocode" the data in your table. Geocoding means instructing the software to match the addresses in your table with the addresses in the software. Once your table has been geocoded, a new map layer will be created automatically. Each housing resource in your table will appear as a "feature" on the new map layer.

9. **Choose *Tools – Locate by Address*.** The Locate by Address dialog box appears with the name of your table.

Since we want to match all of the entries in the table, select All Records from the "Address Match" pull-down menu. And because the address information in the table consists of street addresses, you'll tell the software to look for matches in the Streets layer by selecting Streets on the "To Layer" pull-down menu.

In the Input Data Fields area of the dialog box, you'll select UNIQUE_ID as the Record ID. This instructs the software to locate one RESOURCE feature for each record in the UNIQUE_ID column.



Locate RESOURCE by Address

Input Dataviews
Address Match: All Records
To Layer: Streets

Input Data Fields
Record ID: UNIQUE_ID
Number & Street: ADDRESS
(continued):
ZIP Code: ZIP

Mode
● Automatic ○ Ask if Uncertain

Choose All Records
Choose Streets
Choose UNIQUE_ID
Choose ADDRESS
Choose ZIP
Choose Automatic
Click OK

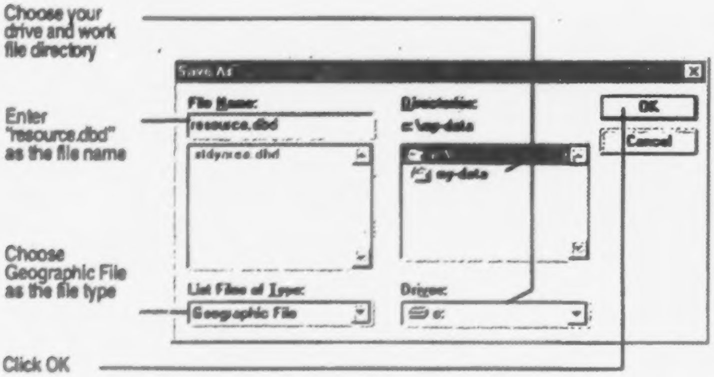
FYI
Recall that there are two file formats available for saving map layers. One format, with the ".cdf" suffix, is compact and displayed quickly, but you can't make changes to it. The other format, with the ".dbd" suffix, is a larger format and displays more slowly, but allows you to make changes.

Saving The New Map Layer

The Save As dialog box will appear automatically. By saving the new map layer as a geographic file, you will be able to add the file as a layer in any map you choose. For example, you could add the layer to a map of low income or high unemployment areas, to show the location of these resources relative to where they may be needed.

You will save the geocoded addresses as a geographic file with the ".dbd" extension, so you can make changes to it in the future.

10. **Save your layer by choosing the options indicated below:**



Choose your drive and work file directory

Enter "resource.dbd" as the file name

Choose Geographic File as the file type

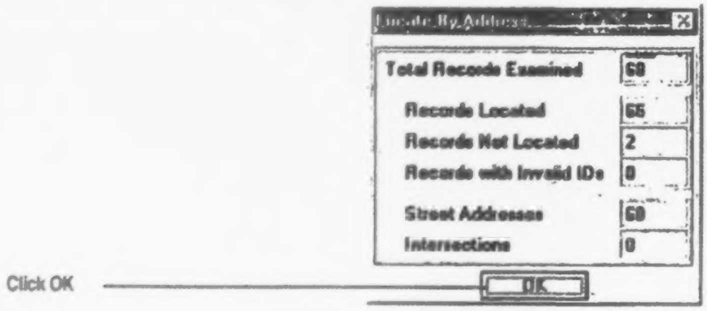
Click OK

File Name: resource.dbd
stdyarea.dbd
Directories: c:\my-data
c:\
my-data
List Files of Type: Geographic File
Drives: c:

After you click OK in the Save As dialog box, you'll see status bars showing the software's progress as it searches the Study Area Map for the addresses in your table.

FYI
As you can see in this dialog box, two of the resource addresses in the Streets layer could not be located. This is because the resource entries were missing valid address information.

11. When the software is finished, it will display a report of the records located. **Click OK.**



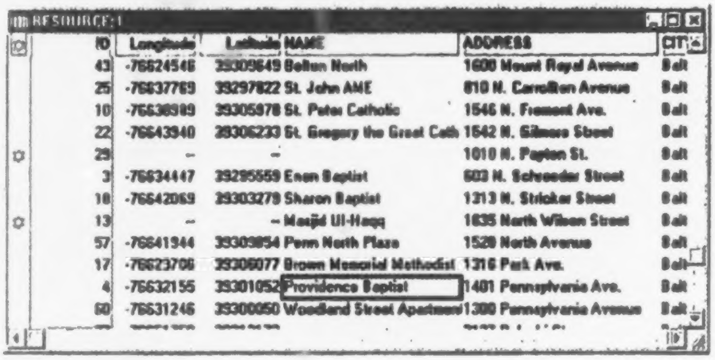
Total Records Examined 68
Records Located 66
Records Not Located 2
Records with Invalid IDs 0
Street Addresses 68
Intersections 0

Click OK

Now that the RESOURCE table has been geocoded, you'll notice that there is a new dataview on screen. Whereas the first dataview shows the original resource table itself, the new dataview (below) represents the data in the new map layer that was created *from* the original table.

FYI
The asterisks in the map layer dataview (at right) and the asterisks on the map (next page) have opposite meanings:

- In the dataview, the asterisk indicates that an address could *not* be geocoded.
- In the map, the asterisks mark addresses that *are* geocoded.



RESOURCE:1

	ID	Longitude	Latitude	NAME	ADDRESS	CIT
	43	-76624546	39309649	Bolton North	1600 Mount Royal Avenue	Balt
	25	-76637769	39297822	St. John AME	810 N. Carrollton Avenue	Balt
	10	-76636989	39305978	St. Peter Catholic	1546 N. Fremont Ave.	Balt
	22	-76643940	39306233	St. Gregory the Great Cath	1542 N. Gilmore Street	Balt
*	29	–	–		1010 N. Payton St.	Balt
	3	-76634447	39295559	Enon Baptist	603 N. Schroeder Street	Balt
	18	-76642069	39303279	Sharon Baptist	1313 N. Stricker Street	Balt
*	13	–	–	Masjid Ul-Haqq	1635 North Wilson Street	Balt
	57	-76641944	39309854	Penn North Plaza	1520 North Avenue	Balt
	17	-76623706	39306077	Brown Memorial Methodist	1316 Park Ave.	Balt
	4	-76632155	39301052	Providence Baptist	1401 Pennsylvania Ave.	Balt
	60	-76631246	39300050	Woodland Street Apartment	1300 Pennsylvania Avenue	Balt

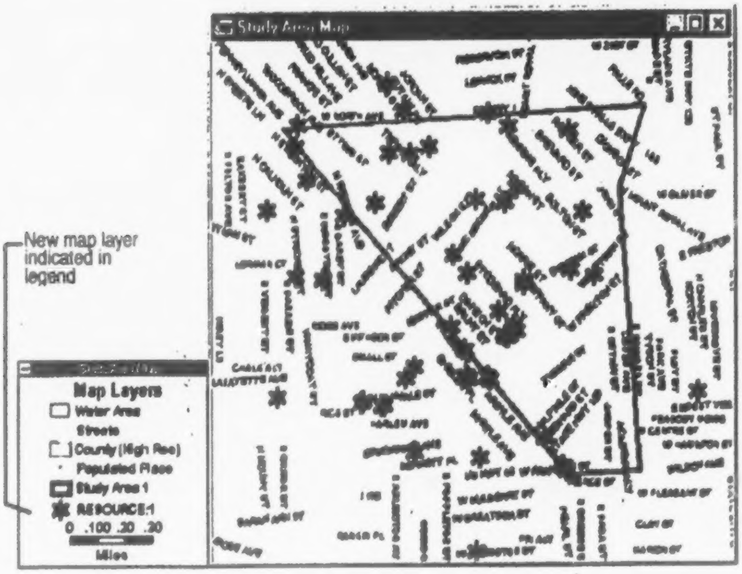
Looking at the New Map Layer Dataview

You'll notice four differences between the original table and the new map layer dataview:

- First, the dataview of the new map layer shows the name "RESOURCE:1" in the title bar. The software automatically named the new layer by adding ":1" to the end of the name of the original table, to keep the two distinct. (You'll learn how to change this name in Exercise 3.)
- Second, the RESOURCE:1 dataview has a column called "ID" which corresponds to the UNIQUE_ID column in the original table.
- Third, RESOURCE:1 has two new columns to the right of ID, indicating the longitude and latitude coordinates for each address.
- Fourth, RESOURCE:1 has a new column to the left of ID. This column contains an asterisk to mark each address in the table that couldn't be geocoded because of missing or invalid address information.

Looking at the New Map Layer

You'll also notice that the map legend shows the new map layer "RESOURCE:1." The map now displays a large asterisk in the RESOURCE:1 layer for each address in the table that it could find in the Streets layer.


Study Area Map
Map Layers
Water Area
Streets
County (High Res)
Populated Place
Study Area 1
RESOURCE:1
0 .100 .20 .30
Miles

New map layer indicated in legend

Saving Your Map

In previous steps you were prompted by the software to save the geocoded table as a geographic file. Since you haven't made any changes to that dataview, you don't need to save it again.

Remember, though, that a map file is not the same as a geographic file. (A map file uses geographic files as map layers.) Since you have changed the Study Area Map by adding a new geographic file, it's a good idea to save your changes.

12. **Click on the map** window for the Study Area Map to make it the active window.

13. **Choose** ***File – Save As*** **and save your map** as **resource.map** in **C:\my-data.**

    Don't close your map yet—you'll be using it in the next exercise.

Wrapping Up

Congratulations—you've just learned how to open your own community resources data file, create a map layer showing your data, and save the file for use as a layer in other maps.

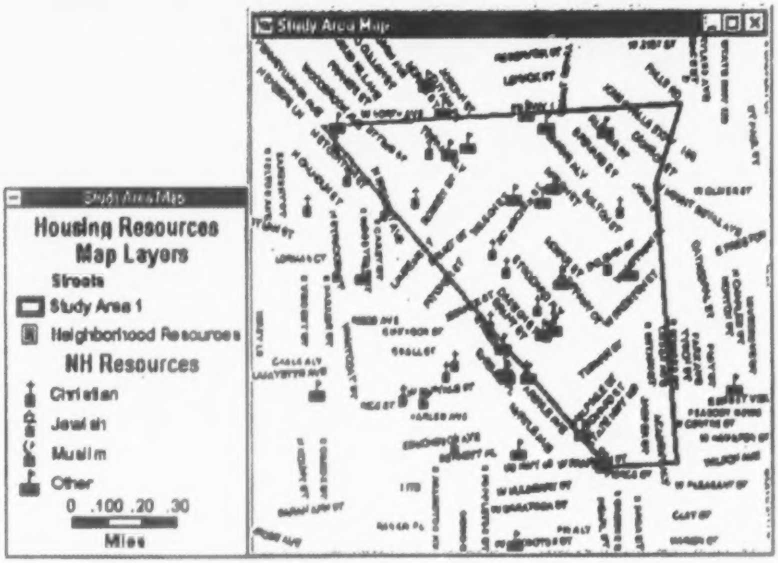
In the next exercise, you'll learn to alter the appearance of the map symbols that represent resource locations.

Exercise 2: Customizing Your Housing Resources Map

Introduction

A map is an effective communications tool only if it is easy to understand. Much of your map's effectiveness depends on how clearly your information is graphically presented.

To help you make your map as clear and informative as possible, the software provides tools to tailor the graphical style of every element in your map, from individual map-layer features, to entire map layers and the map's legend.


Study Area Map
Study Area Map
Housing Resources Map Layers
Streets
Study Area 1
Neighborhood Resources
NH Resources
Christian
Jewish
Muslim
Other
0 .100 .20 .30
Miles

What You Will Learn In Exercise 2

In the previous exercise, you created a map layer of local community housing resources. In this exercise you're going to learn how to make the map communicate more clearly and effectively. You'll learn how to:

- Change the layer style of the map layer representing housing resources.
- Use the Color Theme MapWizard tool to graphically communicate more information about map features. For example, housing resources provided by churches, synagogues and mosques will be represented by their traditional symbols.
- Simplify and enhance the map legend by hiding layers, renaming other layers, and customizing the legend text.

Steps

In the following steps, you'll make a layer-wide style change by replacing the default symbol (✱), with another symbol (▣), for *all* of the resources shown on the map.

Then, to make it possible to tell one kind of resource from another, you'll assign three more symbols to different *categories* of resources.

Making a Layer-Wide Style Change

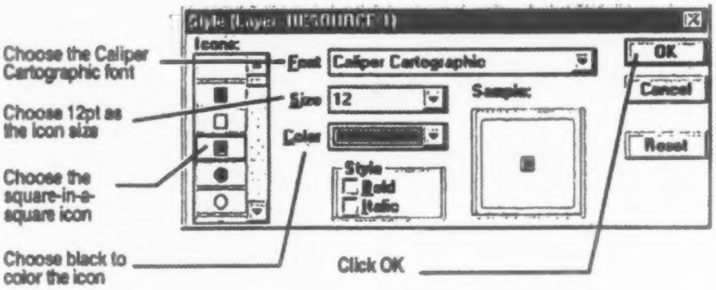
1. **Open your Study Area Map.**

   To make changes to a map layer, it must be selected as the "working layer."

2. On the main tool bar, **select the layer "RESOURCE:1"** in the working layer pull-down menu.

3. **Click the Layer Style button** .

4. The Layer Style dialog box appears. (NOTE: You also can open the Layer Style dialog box by clicking the Map Layers button on the main tool bar, then clicking the Style . . . button in the Layers dialog box.) **Make the selections indicated below:**



Font: Caliper Cartographic

Size: 12

Choose the Caliper Cartographic font

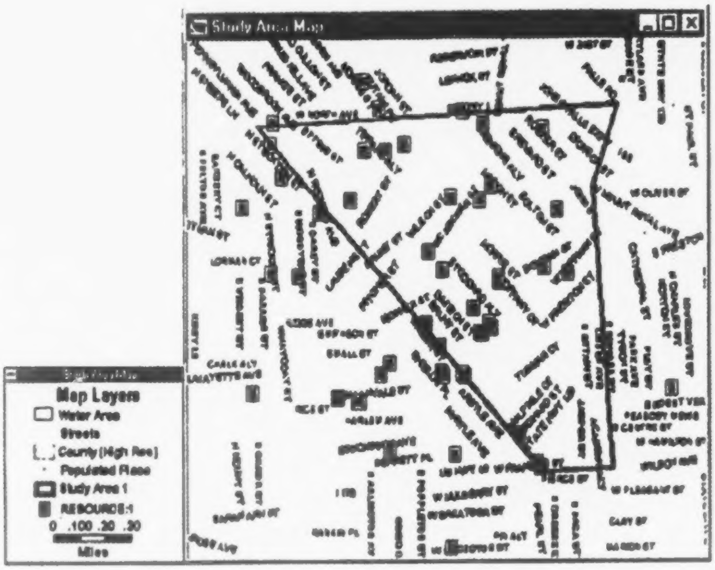
Choose 12pt as the icon size

Choose the square-in-a-square icon

Choose black to color the icon

Click OK

Your map should now resemble the following map. Note that the "square-in-a-square" icons have replaced the asterisks in the legend and on the map.

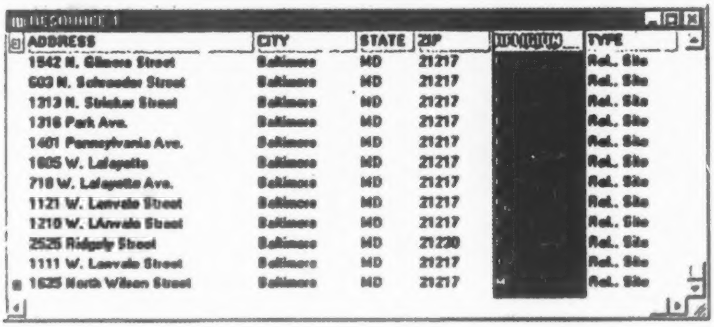


Showing Categories Within a Layer

You've just seen how the symbol for a map feature is changed for an entire layer, using the Layer Style tool. This type of "layer-wide" style change is especially useful when you don't need to distinguish different types of map features in a layer. But in our example, you might want to depict different types of housing resources with different symbols.

The software allows you to assign different symbol shapes, colors, and sizes to different *categories* of map features (e.g., types of housing resources). To do this, the dataview of your map layer must have a column of category information.

You can see in the illustration below that the Resource dataview includes a column labeled "RELIGION." Based on this column, all of the resources can be divided into four categories: Christian, Jewish, Muslim or Other (C, J, M, or O).



ADDRESS	CITY	STATE	ZIP	RELIGION	TYPE
1542 N. Gilmore Street	Baltimore	MD	21217	[illegible]	Rel. Site
603 N. Schroeder Street	Baltimore	MD	21217	[illegible]	Rel. Site
1313 N. Stricker Street	Baltimore	MD	21217	[illegible]	Rel. Site
1316 Park Ave.	Baltimore	MD	21217	[illegible]	Rel. Site
1401 Pennsylvania Ave.	Baltimore	MD	21217	[illegible]	Rel. Site
1605 W. Lafayette	Baltimore	MD	21217	[illegible]	Rel. Site
718 W. Lafayette Ave.	Baltimore	MD	21217	[illegible]	Rel. Site
1121 W. Lanvale Street	Baltimore	MD	21217	[illegible]	Rel. Site
1210 W. LAnvale Street	Baltimore	MD	21217	[illegible]	Rel. Site
2525 Ridgely Street	Baltimore	MD	21230	[illegible]	Rel. Site
1111 W. Lanvale Street	Baltimore	MD	21217	[illegible]	Rel. Site
1625 North Wilson Street	Baltimore	MD	21217	M	Rel. Site

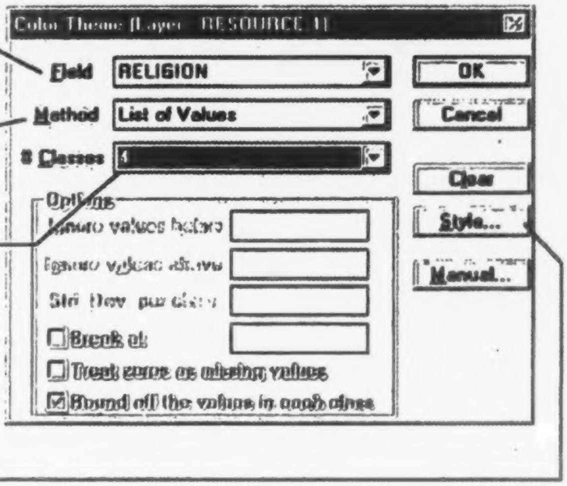
Changing the Color Theme

To assign different styles to different categories of map features, you'll use a tool called the "Color Theme Map Wizard."

5. **Click the Color Theme MapWizard button** on the main menu.

   The Color Theme dialog box appears. The Color Theme dialog box allows you to change the graphical style, as well as the legend text, for each category within a field. The field you'll use is RELIGION, and you'll find that there are four categories (C, J, M and Other) within it.

6. **Make the selections indicated below.** Note that the software refers to categories as "classes" in the Color Theme dialog boxes.



Color Theme (Layer: RESOURCE 1)

Field: RELIGION

Method: List of Values

# Classes: 4

☑ Round off the values in each class

Choose the field RELIGION

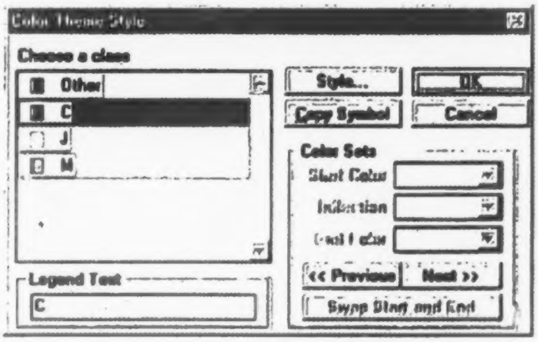
Choose the method List of Values

Set the number of Classes to 4

Click Style

OK
Cancel
Clear
Style...
Manual...
Options
Ignore values below
Ignore values above
Std Dev per class
☐ Break at
☐ Treat zeros as missing values

After you **click the Style... button**, the Color Theme Style dialog box will appear:



Color Theme Style

Legend Text: C

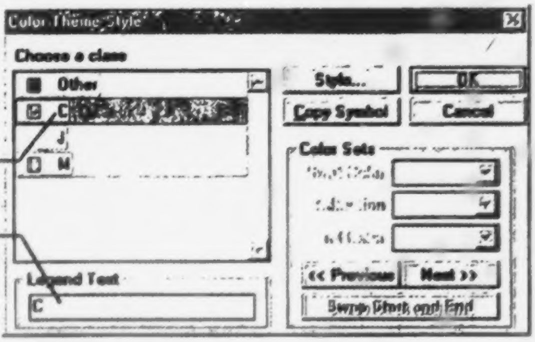
Choose a class
Other
C
J
M
Style...
OK
Copy Symbol
Cancel
Color Sets
Start Color
Inflection
End Color
<< Previous
Next >>
Swap Start and End

Changing the Map Legend Text for Each Category

When subcategories of a map feature are displayed in a map layer, the software provides the option of displaying the names of the categories, and their symbols, in the map legend.

7. To re-label your housing resource categories, **choose a "Class"** (religion category) in the scrolling list on the left-hand side of the dialog box, and then **re-type the label in the Legend Text field.** For example, replace "C," with "Christian."

   After you have completed one class, do *not* click OK and do *not* hit ENTER—simply **repeat the process** so that the "J" and "M" are replaced by "Jewish" and "Muslim," respectively.


Color Theme Style
Choose a class
Other
C
J
M
Style...
OK
Copy Symbol
Cancel
Color Sets
<< Previous
Next >>
Swap Start and End
Legend Text

Legend Text: C

Choose a class here...

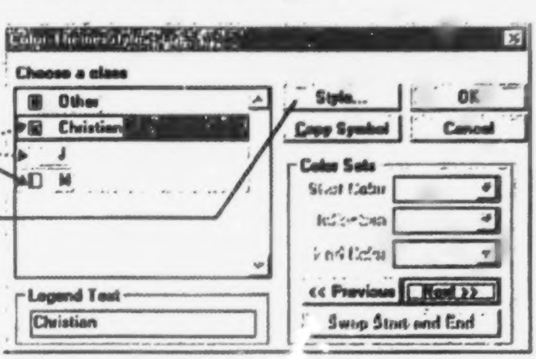
...then retype the legend text here. Repeat for each religion.

Changing the Map Symbol for Each Category

When you have changed the legend text for a religion category ("class"), the Color Theme Style dialog box should look like the illustration below.

Next you'll assign a new symbol to three of the categories.

8. **Choose one of the classes on the left and click Style....**


Color Theme Style
Choose a class
Other
Christian
J
M
Style...
OK
Copy Symbol
Cancel
Color Sets
Start Color
Middle Color
End Color
<< Previous
Next >>
Swap Start and End
Legend Text

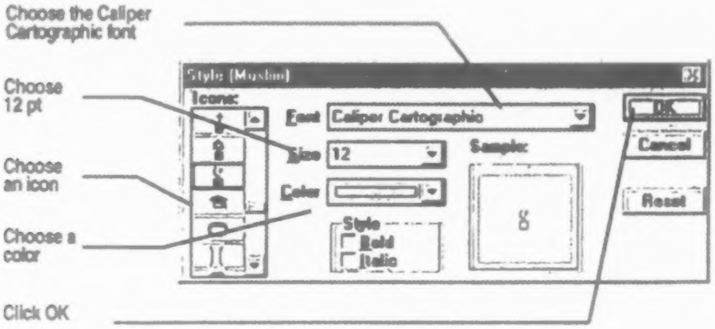
Legend Text: Christian

Choose a class here

Then click Style

The Style dialog box for an individual class will appear.

9. Under **Font, choose Caliper Cartographic**, then scroll through the icon list on the left-hand side of the dialog box until you find the religious site symbols shown in the illustration below. **Make the following selections and click OK.**



Choose the Caliper Cartographic font

Choose 12 pt

Choose an icon

Choose a color

Click OK

Style (Muslim)

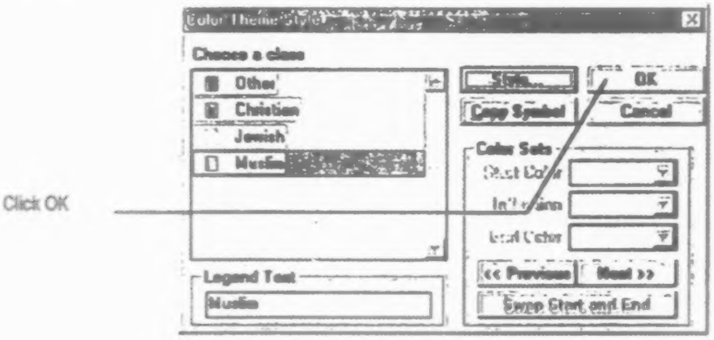
Font: Caliper Cartographic

Size: 12

Style: ☐ Bold ☐ Italic

Icons:
Color
Sample:
OK
Cancel
Reset

10. After clicking OK, you are returned to the Color Theme Style dialog box. **Select another class, click Style again, and repeat the process for each class** (choosing a different color for each) until the Color Theme Style dialog box appears as shown below. Then **click OK.**



Click OK

Color Theme Style

Choose a class

- Other
- Christian
- Jewish
- Muslim

Legend Text: Muslim

Style...
OK
Copy Symbol
Cancel
Color Sets
Start Color
Int. Colors
End Color
<< Previous
Next >>
Swap Start and End

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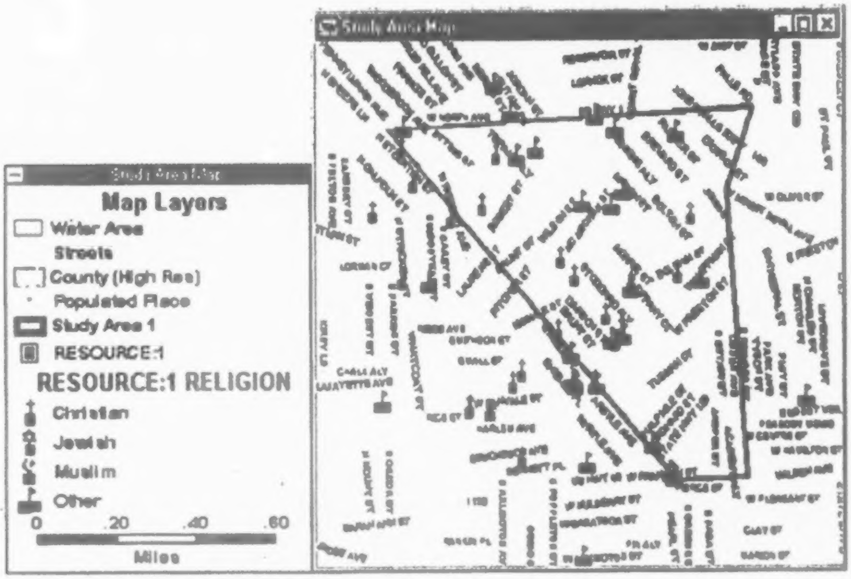
Now your map and legend should resemble the following illustration. If your legend does not reflect the changes you made, select the Pointer Tool, double-click the legend, and make sure that the option "Thematic Maps" is selected in the Legend Settings dialog box; then click OK. If the legend does not reflect the changes you have made, double click the Show/Hide Legend button in the main menu toolbar. Your legend and map should now reflect the changes you've made:


Study Area Map
Map Layers
Water Area
Streets
County (High Res)
Populated Place
Study Area 1
RESOURCE:1
RESOURCE:1 RELIGION
Christian
Jewish
Muslim
Other
0
.20
.40
.60
Miles

Hiding Unnecessary Map Layers

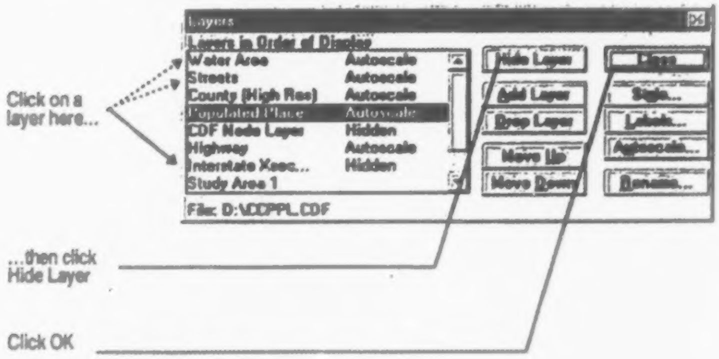
The map and the legend now communicate much more information than when we started. But a glance at the legend tells us that the map could be made even clearer:

- First, several of the legend items don't actually show up in your map in your neighborhood study area: there are no bodies of water, county lines, or populated place symbols in the study area. These map layers are unnecessary for this exercise and only clutter the legend.
- Second, the legend doesn't have a main title. As is true of any document, a title can make the legend, and the map as a whole, more comprehensible.
- Third, the layer name "RESOURCE:1" and the second subtitle in the legend, "RESOURCE:1 RELIGION" are potentially confusing.

You'll remedy these shortcomings in the next few steps, by hiding unneeded layers, renaming another, and editing your legend.

11. Choose the Map Layers button on the main tool bar.

12. The Layers dialog box will appear. One by one, **select and hide each layer except Streets, Study Area 1 and RESOURCE: 1. Click Close.**


Layers
Layers in Order of Display
Hide Layer
Add Layer
Drop Layer
Move Up
Move Down
Close
Style...
Labels...
Autoscale...
Rename...

Water Area	Autoscale
Streets	Autoscale
County (High Res)	Autoscale
Populated Place	Autoscale
CDF Node Layer	Hidden
Highway	Autoscale
Interstate Xsec...	Hidden
Study Area 1	

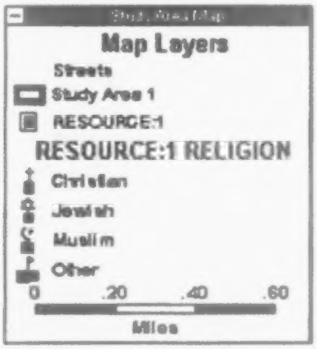
File: D:\CCPPL.CDF

Click on a layer here...

...then click Hide Layer

Click OK

Your map legend should now look like this:



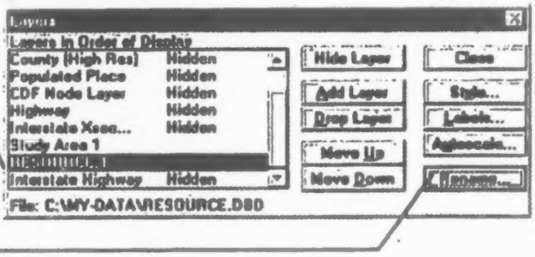
Map Layers
Streets
Study Area 1
RESOURCE:1
RESOURCE:1 RELIGION
Christian
Jewish
Muslim
Other
0
.20
.40
.60
Miles

Renaming Your Housing Resource Layer

Remember that the map layer name "RESOURCE: 1" was created automatically by the software, from the file name of the original table. The file name was limited to eight characters, but you can give the map layer a more informative name in the legend by using more than eight letters.

FYI
Changing the map layer name does *not* change the name of the geographic file.

13. **Click the Map Layers button** on the main toolbar. Scroll through the list on the left-hand side until the RESOURCE:1 layer is visible. **Select RESOURCE:1,** then **click the Rename** button in the lower right corner of the dialog box.


Layers
Layers in Order of Display
Hide Layer
Add Layer
Drop Layer
Move Up
Move Down
Close
Style...
Labels...
Autoscale...
Rename...

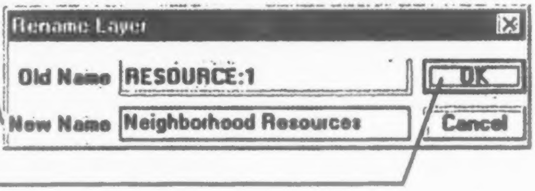
County (High Res)	Hidden
Populated Place	Hidden
CDF Node Layer	Hidden
Highway	Hidden
Interstate Xsec...	Hidden
Study Area 1	
RESOURCE:1	
Interstate Highway	Hidden

File: C:\MY-DATA\RESOURCE.DBD

Choose the RESOURCE:1 layer

Click Rename

14. The Rename Layer dialog box appears. **Enter "Neighborhood Resources" in the New Name field and click OK.**


Rename Layer
OK
Cancel

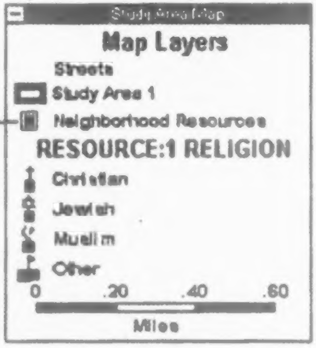
Old Name RESOURCE:1
New Name Neighborhood Resources

Type Neighborhood Resources

Click OK

15. You are returned to the Layers dialog box. **Click Close.**

The next time your map legend redraws, it should look like this:


Study Area Map
Map Layers
Streets
Study Area 1
Neighborhood Resources
RESOURCE:1 RELIGION
Christian
Jewish
Muslim
Other
0
.20
.40
.60
Miles

Your re-named layer

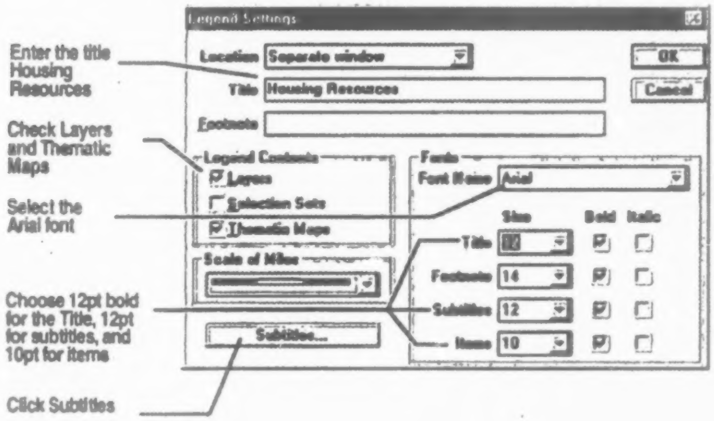
Editing the Map Legend

Next you'll add a title to the map legend, edit the subtitles, and change the style of the legend text.

16. **Select the pointer tool** from the Maptitude tool box and **double-click directly on the map legend.**

    The Legend Settings dialog box appears.

17. **Make the choices indicated below, then click the Subtitles button** in the lower left-hand corner of the dialog box.



Location: Separate window

Title: Housing Resources

Footnote:

Legend Contents
☑ Layers
☐ Selection Sets
☑ Thematic Maps

Scale of Miles

Fonts
Font Name: Arial

	Size	Bold	Italic
Title	12	☑	☐
Footnote	14	☑	☐
Subtitles	12	☑	☐
Items	10	☑	☐

Enter the title Housing Resources

Check Layers and Thematic Maps

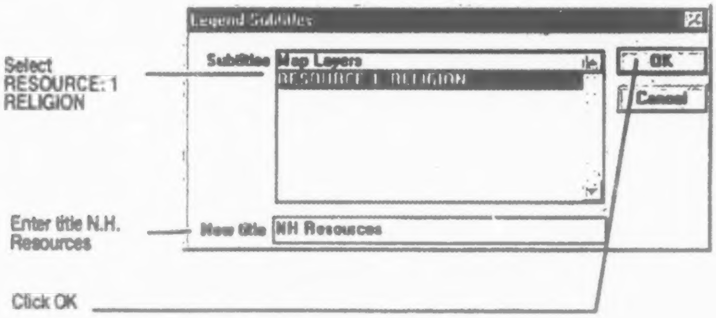
Select the Arial font

Choose 12pt bold for the Title, 12pt for subtitles, and 10pt for items

Click Subtitles

FYI
If your computer doesn't have the Arial font, substitute any similar font, such as Helvetica, Geneva or Universe.

18. The Legend Subtitles dialog box appears. **Make the selections below and click OK.**



Subtitles: Map Layers
RESOURCE 1 RELIGION

New title: NH Resources

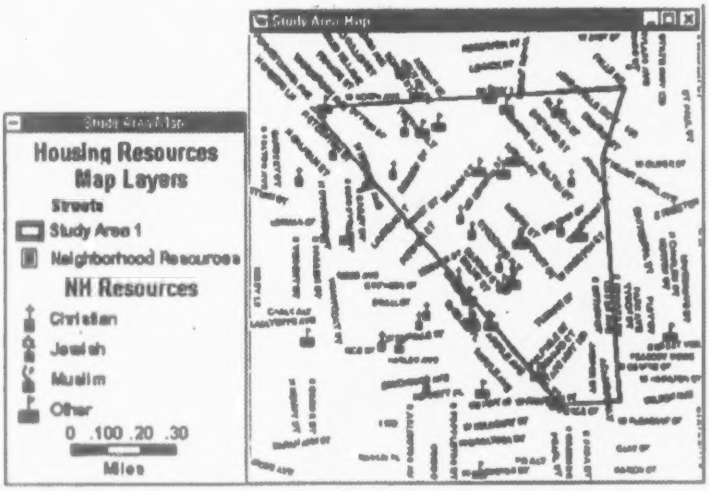
Select RESOURCE: 1 RELIGION

Enter title N.H. Resources

Click OK

19. You are returned to the Legend Settings dialog box. **Click OK.**

Your map legend should now resemble the illustration at left, below:


Study Area Map
Study Area Map
Housing Resources Map Layers
Streets
Study Area 1
Neighborhood Resources
NH Resources
Christian
Jewish
Muslim
Other
0 .100 .20 .30
Miles

Wrapping Up

In this exercise, you learned to make your map easier to understand by changing layer styles, using the color theme to make your symbols more informative, and editing and modifying your map legend. We recommend practicing these techniques in other exercises and with your own maps, to make your maps clearer and more informative.

Chapter Four Summary Questions

1. Each record must contain a Unique ID or serial number before the software can geocode the records within the file. True or False
2. What are the necessary fields a dataview table must include to be geocoded?
3. An asterisk on a dataview carries a different meaning from an asterisk on a map. Explain this difference.
4. Use the ____________ button to assign different styles to different categories of map features.

CHAPTER

5

Proposing My Own Projects

Introduction

Planning and mapping proposed projects often starts with information on a piece of paper. The software offers several alternative ways to locate points on a map. You can store and display information about each project using tables or forms built into the software, or you can start with just enough information to pinpoint proposed locations on a map. At the same time, Community 2020 allows you to make a database for additional information to be added later.

Problem Statement

You re preparing information to attend an upcoming public hearing on economic development proposals for neighborhood "X". After reviewing the plans submitted by local developers, you decide to present some alternative sites. You need to plot the alternative sites and rush to a 24 hour copy center to get poster sized blow-ups before the evening meeting. How do you get started?

What You Will Learn In Chapter 5

- How to locate a proposed project by address and display it on a map.
- How to save information about the proposed project using the Proposed Project form.
- How to locate a proposed project by pointing to a spot on the map.
- How to locate a proposed project in relation to a feature that is already mapped.
- How to save the information you have entered as a database file so you may edit of display it in a table.

Exercise 1: Proposing My Own Projects

IN THIS CHAPTER

Introduction 5-1
Exercise 1: Proposing My Own Projects 5-2

Preparatory Steps

Using the Map Library tool, **open the following map**:

Location: Study Area
Map Category: Community Development Maps
Map: Metropolitan Community Projects

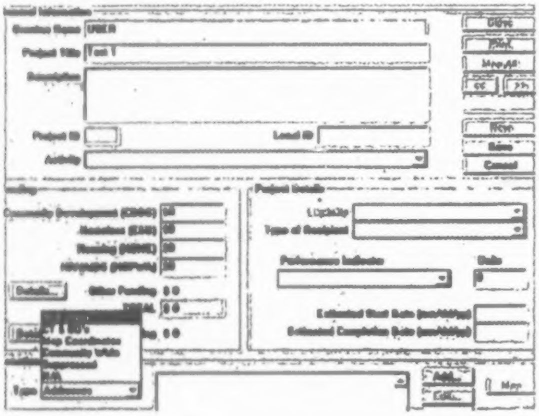
In order to enter data into a Proposed Project form, you must have this map open, which includes the User Project Layer.

Add the file stdyarea.dbd, located in C:\my-data , by **clicking on the Map Layers button** in the main menu toolbar and **clicking the Add Layer button** in the resulting dialog box. **Change the style of your Study Area 1 layer** (it is imported with a default black hairline style) **with the Style button** on the main menu toolbar, in order to better view it.

Steps to Add a Project for which you know the street address:

1. **Click the User Projects button** in the HUD tool box. In the resulting dialog box, **choose Create a new User Project. Click OK.**

2. All data boxes are optional except for Project Title and Location Type. **Click in the Project Title box and type "Test 1". Under Location, click on the drop down area opposite Type. Click on Addresses. Then click Add...**



Project Title: Test 1

Type: Addresses

3. You need to enter the Street Address and Zip Code in the Address Info dialog box. You do not need to provide the city or state. For this example, **type "1547 Argyle Avenue" under street and "21217" under ZIP Code. Click OK.**

4. The software will confirm that it successfully located the address. **Click OK.**

5. In the Proposed Projects dialog box **click Save** to add the proposed project to the User Projects layer. This project will now appear whenever you add the User Project layer to any map.

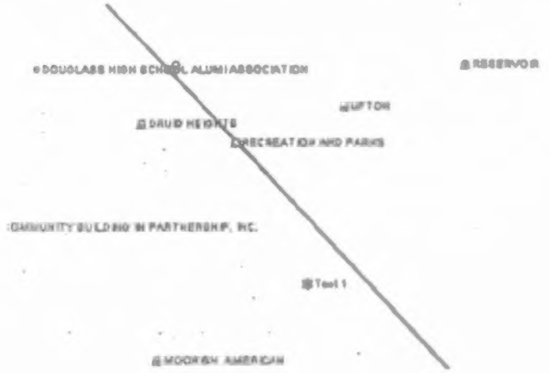
Steps to add a project for which you know the location on your study area map:

6. A number of new options are now active in the Proposed Project dialog box. For example, the Edit button could be used to add more information about this project. Another location could be added with the Edit function, but the software only permits one location *type* per proposed project. **Click New** to open a blank Proposed Projects form.

7. **Give this new project the title "Test 2"** under Project Title. **Choose Map Coordinates** as the **Location Type. Click Save.**

8. You can return to your map using either the Map All or the Close button. **Choose Close** to return to the location and scale from which you began entering data on user proposed projects. Test 1 will be displayed on your map.

9. Assume that Test 2 is located just southeast of the cluster of HUD projects that includes Reservoir Hill, in the large triangle at the north boundary of the study area. **Click the Add Project Location button** in the HUD tool box. **Place the cursor in the triangle and click FIRMLY. Click** OK in the Add Coordinate to Project dialog box. Test 2 is now added to your map.


DOUGLASS HIGH SCHOOL ALUMI ASSOCIATION
RESERVOIR
UPTON
DRUID HEIGHTS
RECREATION AND PARKS
COMMUNITY BUILDING IN PARTNERSHIP, INC.
Test 1
MOORISH AMERICAN

Steps for Finding a Location to Add:

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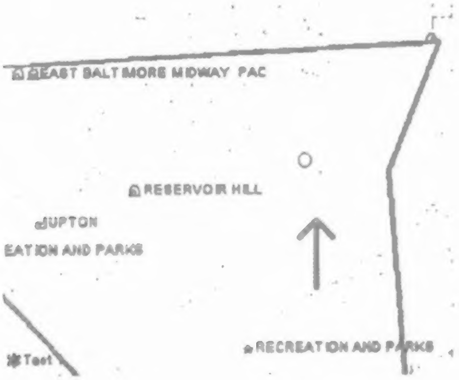
Assume that Test 2 has another proposed location. You don't know visually where it is on the map, but you know its location in reference to a feature that is part of the data stored in the software. For example, a recreation center or park might be next to a school, hospital, or other prominent landmark. Another proposed or actual location might be in the middle of a Zip Code or other area feature.

10. **Click on the Find tool** on the main tool bar**. Select landmark from the "Find An" section** of the dialog box, and **type in "WOMANS HOSPITAL". Click OK**. The map will redraw, with the map feature you selected, Womans Hospital, in the center marked with a blue circle.

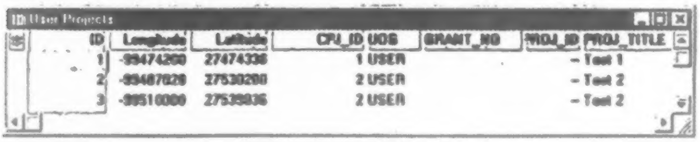


(NOTE: In order for the Find tool to work properly, you must enter the reference exactly how it is listed in the Census landmark file. In this case, the name "WOMANS HOSPITAL" does not contain an apostrophe.)

11. **Choose User Projects as the Working Layer in the pull-down menu on the main tool bar. Click on the Add Project Location button** in the HUD tool box. **Place the cursor directly across the street from the blue circle and click FIRMLY**. Test 2 is the choice provided in the resulting dialog box because it is the only user project with Map Coordinates specified as the Location Type. **Highlight Test 2 in the dialog box, and click OK.**

Steps for Saving a Data Base File (.dbf)

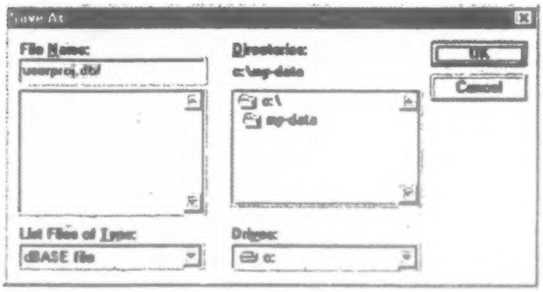
12. Make sure User Projects is the Working Layer shown on the main tool bar. **Click the New Dataview button** ▥ in the main tool bar to display the information you entered.



User Projects

ID	Longitude	Latitude	CPU_ID	UOG	GRANT_NO	PROJ_ID	PROJ_TITLE
1	-99474200	27474336	1	USER		–	Test 1
2	-99487026	27530200	2	USER		–	Test 2
3	-99510000	27539936	2	USER		–	Test 2

13. **Choose** *File-Save As* from the main menu. In the Save As dialog box, **select dBASE** under List Files of Type. Under drives, **select C:** . In the Directories section, **double click on the folder my_data** to open it. **Call the file userproj.dbf and click OK.**



Save As

File Name: userproj.dbf

Directories: c:\my-data

List Files of Type: dBASE file

Drives: c:

Wrapping Up

In this chapter you learned three methods to locate points on a map. You also learned how to use the map, the Proposed Projects form, and a data table to save and display information.

Chapter Five Summary Questions

1. Each project must be geocoded by a single *type* of location (e.g., Map Coordinates). True or False

2. There are several types of locations for projects that do not have a specific address. True or False

3. A project can be located at more than one lacation. True or False

4. To locate project records on a map, you must first open a map that includes ___________.

CHAPTER

6

Analyzing My Community's Demographics

REQUIREMENTS FOR CHAPTER 6

The exercises in this chapter assume you have read Chapter 1 and performed the exercises in Chapter 2. The exercises you will perform in this chapter use files and maps you created in Chapter 2.

Introduction

This software is helpful in that it allows you to extract and separate the information relevant to your project from the rest of the region. You can isolate the data behind the maps as well as map features themselves. In the first exercise, you will extract the block group data for only the Study Area from Chapter 2. In the second exercise, you will isolate map features of Baltimore from the rest of the region in order to present a clear and presentable display.

Problem Statement

The Planning Committee has just rejected a preliminary housing proposal to receive grant funding based on the lack of specific demographic information. You are preparing documentation of three *separate* neighborhood's demographic statistics to support the supplemental application submission. The neighborhood includes partial census blocks. How do you get started?

What You Will Learn In Chapter 6

- In Exercise 1 you'll learn how to display demographic statistics of the Study Area created in Chapter 2. To make the Census data correspond to the Study Area, you'll learn how to "trim" the Census block groups along the Study Area boundary. You'll also learn how to view demographic statistics of the Study Area in a Dataview table.
- In Exercise 2 you'll learn how to create a map showing only the area of your choice, without the surrounding areas. The exercise uses the City of Baltimore as the example to create a boundary layer of the city. Layers are then added to show information pertaining only to the City. Finally, you will add the map as part of a new category to your Map Library

In This Chapter

Exercise 1: Displaying Community Statistics 6-3
Exercise 2: Displaying Only Your Community...... 6-14

Exercise 1: Displaying Community Statistics

Introduction

You probably know that the software can create maps showing demographic information—for example, the number of unemployed in each block group of your community. But the software also includes a simple and powerful tool—the ***Dataview Statistics*** command—that you can use to "aggregate" information from all the map areas that make up a community.

DEFINITION

Aggregate:
To add or average information from several areas or locations.

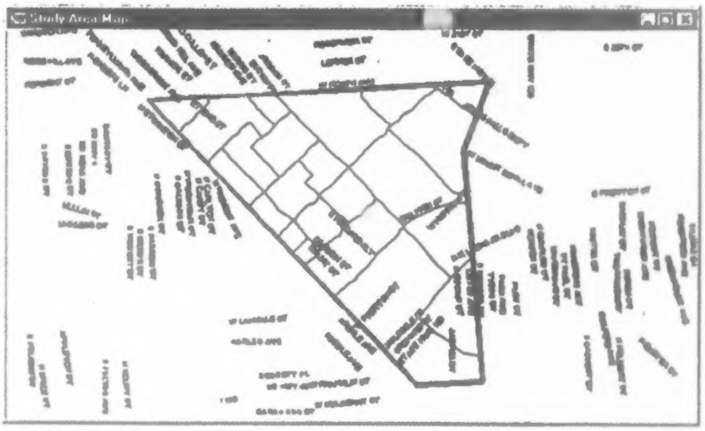
For example, if one of your map layers shows unemployment data by block group, you could use the dataview statistics command to find the total number of unemployed in *all* the block groups. You could also find the average level of unemployment per block group, or the maximum number of unemployed in any one block group, or a variety of other statistics.

This is most straightforward when your community happens to be a predefined geographic area, such as an entire county. But with the tools and techniques demonstrated in this chapter, you can even tailor your statistical queries to your own, customized community boundaries.

DEFINITION

Block group:
A cluster of blocks within a Census Tract that typically contains between 150 and 200 housing units.

In the Study Area defined in Exercise 4 of Chapter 2 there are 23 block groups.



What You Will Learn in Exercise 1

In this exercise you'll find an estimate of the number of children in poverty and under the age of five, living within the Study Area you defined in Chapter 2. To arrive at this goal, you'll learn how to:

- Use the Select by Pointing tool to select block groups in the Study Area
- Create a geographic file of the Study Area block groups
- Use map editing tools to trim block groups along the Study Area boundary
- Display a table (or "dataview") of statistics for the custom-defined community

Steps

Community Statistics Essentials

There are four basic operations that you'll perform to generate statistics for a custom-defined community area:

1. **Open a map with block group census data.**
   Since the Study Area Map doesn't include census data, you'll simply open the Study Area Map and add the map layer of census data by block group.

2. **Create a geographic file of only *local* block groups.**
   You'll select all of the block groups inside or partially inside the study area, then save these block groups as a geographic file, and add the file as a map layer.

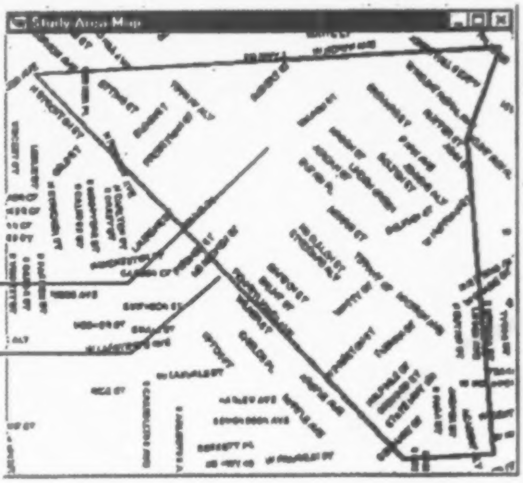
3. **Trim the block groups.**
   You'll use map editing tools to "trim off" the parts of block groups that extend beyond the study area boundary.

4. **Open a dataview and select *Dataview–Statistics*.**
   You'll open a dataview, or table, of the study area block group layer. Then use the ***Dataview – Statistics*** command to open a second table. The second table shows statistics for your study area "aggregated" (added or averaged) across all the block groups in the study area.

   By scrolling through the dataview statistics table, you'll be able to look up statistics for the study area as a whole, such as the estimated number of children in poverty, under the age of five, living in the study area.

Opening the Map

1. **In the Map Library, open the Study Area map** you created in Chapter 2. If necessary, hide the Neighborhood Resources layer you created and saved in Chapter 4. Then the Study Area map should resemble the illustration below:



Study Area

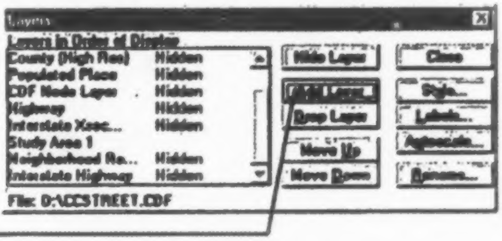
Study Area boundary

Adding the Block Group Layer to the Study Area Map

Next you'll add a map layer that contains demographic information. The layer is called "Block Group," and it contains demographic information from the US Census, for groups of city blocks. A small block group may contain half a dozen city blocks; a large one might have fifteen to twenty city blocks.

2. **Choose *Map – Layers* or click the Map Layers button** on the main tool bar.

3. The Layers dialog box will appear. **Click the Add Layer button** in the dialog box.



Layers in Order of Display

County (High Res)	Hidden
Populated Place	Hidden
CDF Node Layer	Hidden
Highway	Hidden
Interstate Xsec...	Hidden
Study Area 1	
Neighborhood Re...	Hidden
Interstate Highway	Hidden

File: D:\CCSTREET.CDF

Click Add Layer

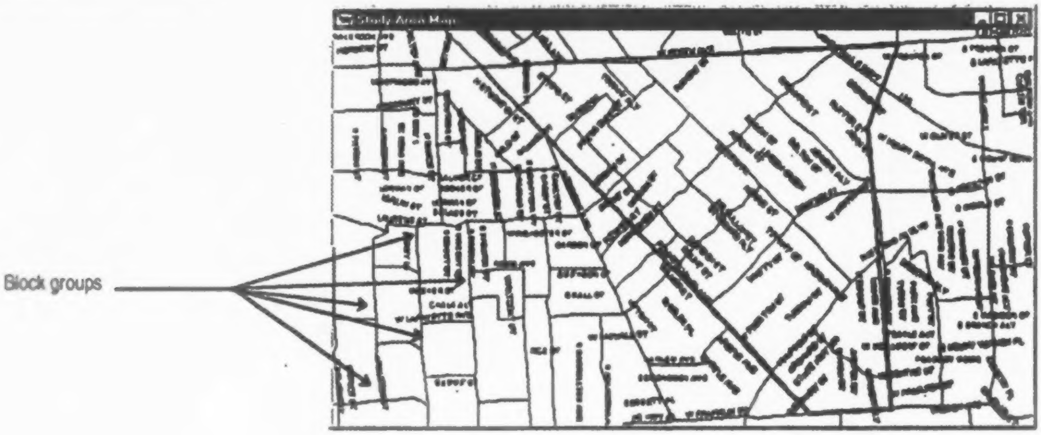
The File Open dialog box appears.

4. The block group data is in a geographic file called "ccbg.cdf." To locate this file, **choose the drive** containing your CD-ROM, then **select the "Geographic" file type,** and **select the file "ccbg.cdf. Click OK**

TIP
For more information on changing the appearance of boundary lines, refer to Chapter 2, Exercise 4, Step 11.

5. You are returned to the Layers dialog box. A new layer, Block Group, is shown in the left-hand pane of the dialog box. To allow yourself to work more easily with the block group layer, **select the layer** name on the left and **click the Style button. Change the Border Width to 2 points,** and **select a color** that contrasts with your Study Area polygon.

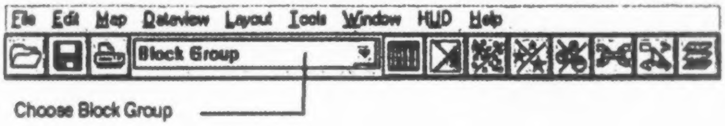
   Your map window should now resemble the illustration below.



Selecting Block Groups in the Study Area

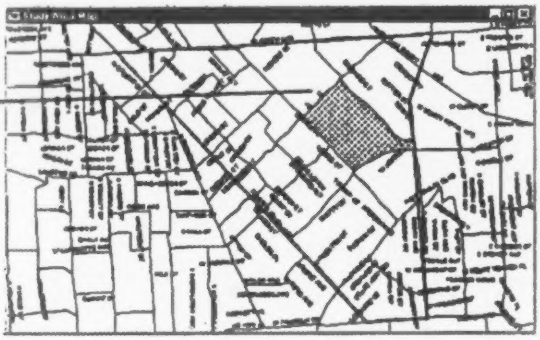
In the following steps you're going to select just the block groups that are inside or partially inside the Study Area.

Make sure that Block Group is the working layer by choosing it (if it does not already appear) in the Working Layer pull-down menu on the main toolbar.



6. **Choose the Select by Pointing tool** from the Maptitude toolbox.

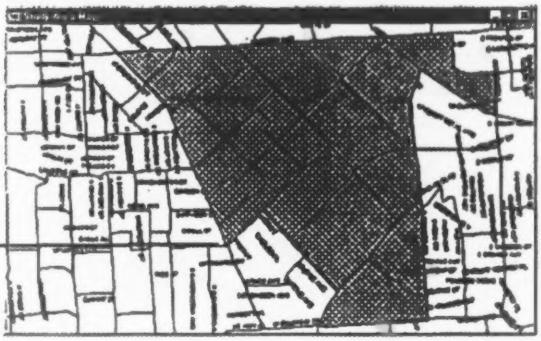
7. **Click in a block group which is at least partly contained within the Study Area boundary**. The block group will appear shaded to show that it has been selected:



Click in any block group within the Study Area

In the next step, you'll select additional block groups within, or partially within, the Study Area boundary.

8. **Holding down the Shift key, click once in every block group that lies within or partly within the Study Area boundary**. When you are finished, your map window should show a region shaded as in the following illustration:



Shift-click each block group in or partially within the Study Area

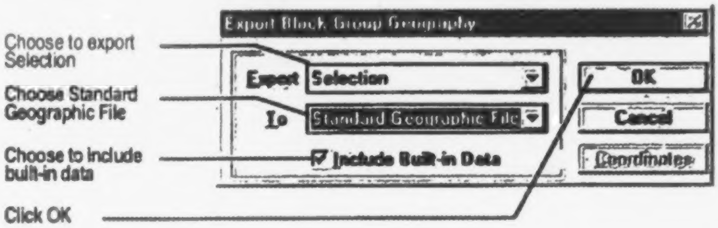
99

Saving the Selected Block Groups as a Geographic File

Now that you've selected the block groups in the Study Area, you can "Export" (save) them as a geographic file that you'll edit later.

> **FYI**
> Remember that there are *two* types of geographic files:
>
> Standard geographic files are editable. Standard geographic file names end in ".dbd."
>
> Compact geographic files are small and fast to display, but can not be edited. Compact geographic file names end in ".cdf."

9. **Choose *Tools – Export*** from the main menu. The Export dialog box will appear. **Make the choices indicated below and click OK.**



Export: Selection

To: Standard Geographic File

☑ Include Built-in Data

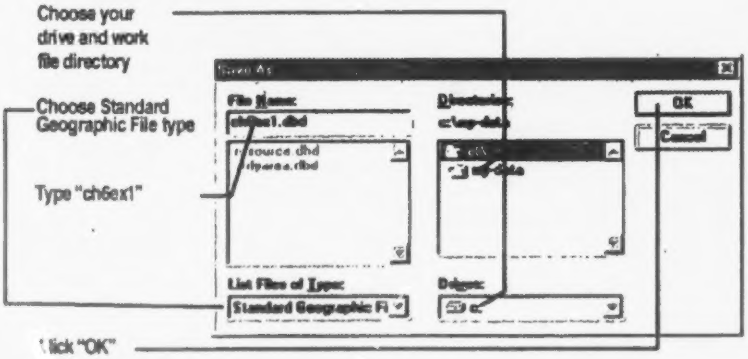
Choose to export Selection

Choose Standard Geographic File

Choose to include built-in data

Click OK

10. The Save As dialog box appears. **Make the choices indicated below and click OK.**



File Name: ch6ex1.dbd

List Files of Type: Standard Geographic Fi

Drives: c:

Choose your drive and work file directory

Choose Standard Geographic File type

Type "ch6ex1"

Click "OK"

Adding the Study Area Block Groups Map Layer

Now that you've saved the selected local block groups as a geographic file, you'll add the file to your map as a layer so you can display it. You also edit, or "trim" the layer to tailor it to the Study Area. And since you won't need the original Block Group layer, you'll drop that layer first.

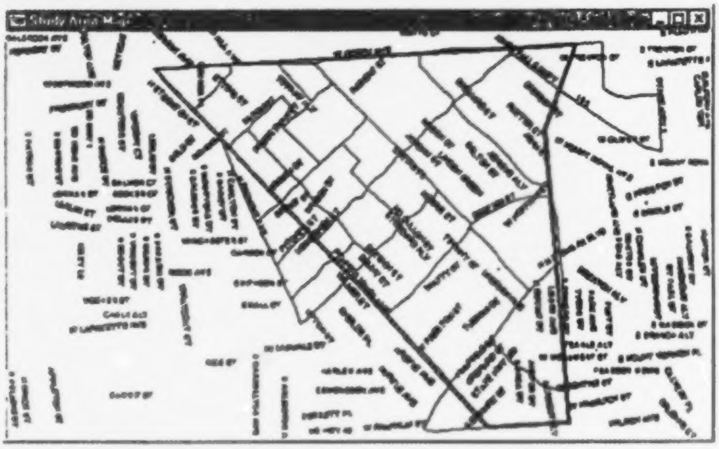
11. **Click on the Map Layers** **button** on the main tool bar. **Select the layer Block Groups** and **click the Drop Layer button.** Don't close the Layers dialog box.

12. Next—while still in the Layers dialog box—**click the Add Layer button.**

13. The File Open dialog box will appear. **Select the geographic file "ch6ex1.dbd"** that you just created (it should be in the "my_data" subdirectory on your C: drive) then **click OK.**

14. Make sure Block Groups is your working layer, and **click the Style button** in the Layers dialog box. **Change the width and color of the border** to make the block groups more visible, as you did in Chapter 2, exercise 4, step 11.

15. Close the Layers dialog box. Your Study Area Map should resemble the illustration below:



16. Make sure that the new layer you added is the working layer shown on the main menu. It will be named "Block Groups" since the selection was exported from the Block Groups layer.

Trimming the Study Area Block Groups

In the following steps you'll trim off the parts of block groups that extend past the study area boundary. To do this, you'll use the Add Area map editing tool that you used in Exercise 4 of Chapter 2.

The key to understanding the following steps is this: when you use the Add Area tool to draw a *new* boundary that crosses an *existing* area, the Add Area tool simply cuts the existing area into two new ones—with the line drawn by the Add Area tool forming the boundary between the two areas.

In the following steps, you'll use the Add Area tool to draw a map boundary that crosses block groups along the study area boundary. Every block group that straddles the study area boundary will be cut into two "sub" block groups—one inside the study area, one outside. In later steps, this will allow you to delete the parts outside the study area.

17. **Choose *Tools – Map Editing*** from the main menu.

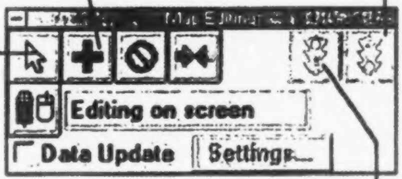
18. The Map Editing tool box appears. **Select the Add Area tool** ➕ from the Map Editing tool box.

    The Add Area and other map editing tools and buttons you'll use in this exercise are described below:

The "Add Area" tool extends your boundary with each mouse click. Double-clicking closes the polygon

The green traffic light ("Save Edits") confirms your map changes

The "Modify Area" tool is used to select and move points and line segments of your area boundary

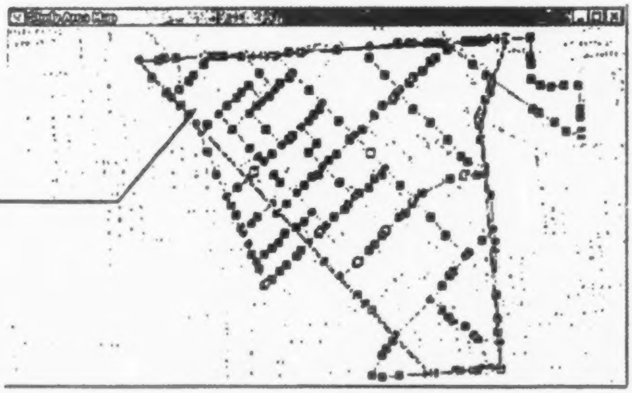


The red traffic light ("Cancel Edits") "undoes" your last map edits

19. Starting on the upper left-hand corner of the Study Area boundary, **click once on each corner of the Study Area, and twice on the last point**. This is the same boundary outline you traced in Exercise 4 of Chapter 2, but this time you can simply follow your outline instead of searching for street intersections.

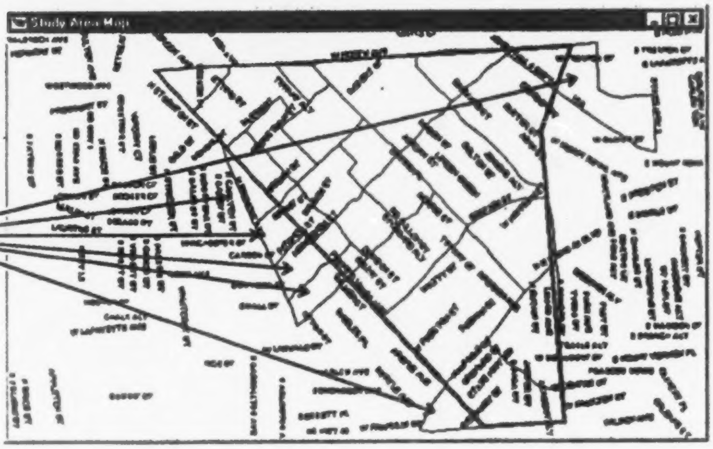
20. When you have finished, your map should resemble the illustration below.

    The dots that have appeared on the block group boundaries indicate that you are editing them, but you must still click the green traffic light on the Map Editing toolbox to save your edits. If you need to redo the previous step, click the red traffic light to cancel your edits.



Block group boundaries show dots before edits are saved

When you **click the green traffic light** **to accept your edits**, the software may pause for a moment. Then the dots on the block group boundaries will disappear, and your map window should look like the illustration below:



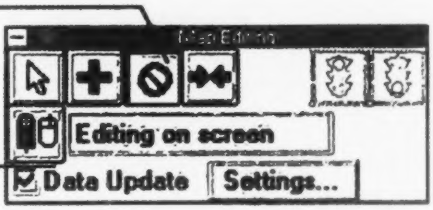
Block groups split into two areas, with new boundaries

Deleting Block Group Portions Outside the Study Area

If you look closely, you can see that each of the six block groups you cut with the "Add Area" tool are now two areas—one area on the outside of the Study Area boundary and one on the inside.

Next you'll eliminate the areas outside the study area.

21. **Select the Delete Area tool** from the Map Editing tool box. **Check the Data Update option.**



Editing on screen

☑ Data Update

Choose the Delete Area tool

Check the Data Update option

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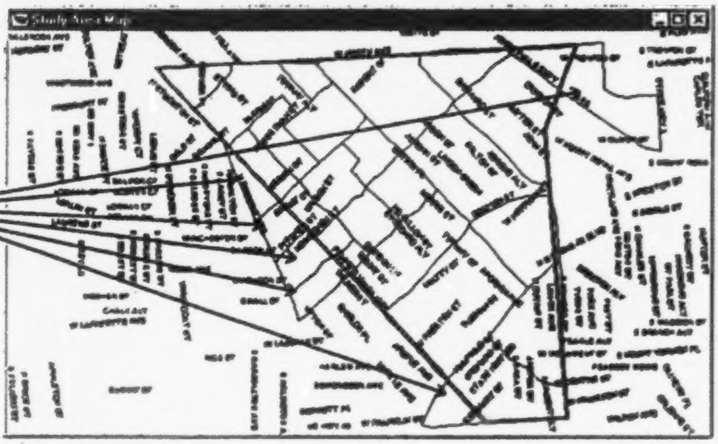
22. **Click in the part of each block group that is outside the Study Area.**

Unlike the selection tools, with the Delete Area tool you don't have to hold down the shift key to choose more than one area to delete.

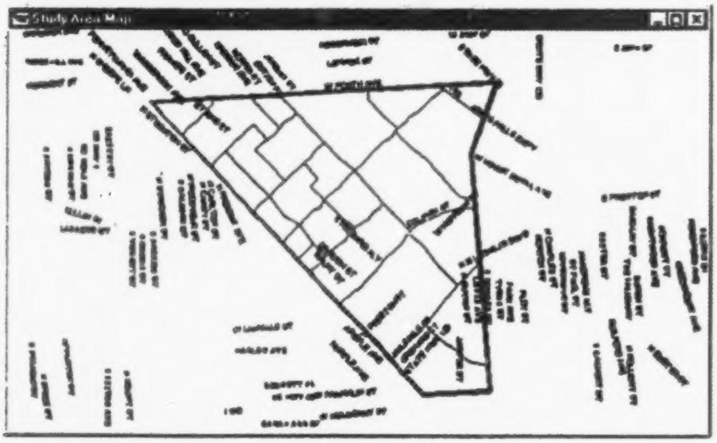
Also unlike the selection tool, when you click on an area with the Delete Area tool, instead of shading the area to show it has been selected, you will notice that the boundary color of each selected area has changed. When you have selected all the areas to be deleted, your map should look like this:



Areas selected with the Delete Area tool

23. **Click on the green traffic light** in the Map Editing tool box to save your edits.

Your map should now resemble the illustration below:



Now your Block Group layer reflects *only* the area contained in the study area. The census information associated with those block groups is still built-in. But for block groups that were trimmed, the software has *adjusted* the population assumptions in proportion to how much area was trimmed.

For example, a block group that was trimmed to half of its original size is now assumed to have half the number of residents of the original block group. (The population and other information that the software calculates for the trimmed block groups is only approximate, but on average it will be reasonably close.)

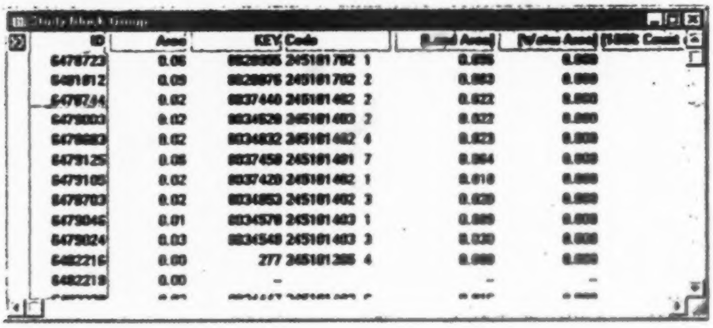
Opening Dataviews of the Study Area Block Groups

Next you'll view a dataview (a kind of on-screen table) of all the census data for the Study Area. The dataview will list, in a dataview table, the categories of information that you just added (and "trimmed") to your study area.

24. First, make sure that the working layer is Block Groups.

25. **Click the New Dataview button** ▦ on the main tool bar. If the new Dataview dialog box appears, choose a table. A "Block Group" dataview will appear. Each row in the dataview corresponds to one block group—or portion of a block group—in the Block Group layer you created.

    Reading across each row, each column contains one piece of information about the area. For example, each area has an ID number in the first column. Other information categories include the block group's land area in square miles and a variety of other geographic and census data. (In fact there are over six hundred columns of data for each Census Tract or Block Group in the software.)



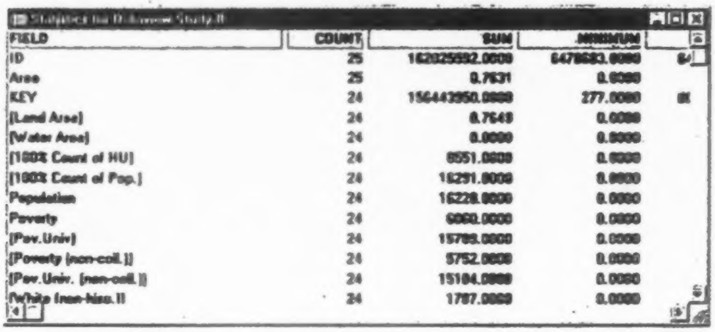
Next, you'll display the "statistics" of the block groups in your study area dataview. The ***Dataview – Statistics*** command takes information for all the areas in the original dataview and calculates various statistics (average land area, average income, etc.).

Also, instead of having one row for each of the block group areas, and a column for each category of information, the statistics dataview has one row for each category of information, and a column for each of the different statistics (average, maximum, minimum, etc.).

26. To determine the approximate number of children under 5 in poverty in the Study Area, **select *Dataview–Statistics*** from the main menu. This opens the

Save Statistics Table As dialog box. **Assign the file name ch6ex1.dbf** to the data base file this step will create. **Click OK.**

A new dataview window will appear with a name such as "Statistics for Dataview Block Group." This is the statistics dataview of the block groups and portions of block groups in the Study Area.



FIELD	COUNT	SUM	MINIMUM
ID	25	162025592.0000	6478683.0000
Area	25	0.7631	0.0000
KEY	24	156443950.0000	277.0000
[Land Area]	24	0.7649	0.0000
[Water Area]	24	0.0000	0.0000
[100% Count of HU]	24	6551.0000	0.0000
[100% Count of Pop.]	24	16291.0000	0.0000
Population	24	16228.0000	0.0000
Poverty	24	6060.0000	0.0000
[Pov.Univ]	24	15789.0000	0.0000
[Poverty (non-coll.)]	24	5752.0000	0.0000
[Pov.Univ. (non-coll.)]	24	15104.0000	0.0000
[White (non-hisp.)]	24	1787.0000	0.0000

27. **Scroll down about three quarters of the way through the dataview** to find the field "[P Bel. Pov. Lev.: <5]." This is the number of persons below the poverty level who are under five years of age.

    The third column, with the heading "SUM," shows the total number of children in the study area that are in poverty and under five.

Wrapping Up

In this exercise you've learned a new way to apply some of the tools and techniques you learned in Chapter 2: You added a layer to your map, selected a portion of the areas in that layer, and saved or "exported" the selection as a geographic file. Then you applied the file to your map as a layer in its own right. This is a simple but powerful technique with many applications. Use it whenever you need to display or analyze the information from a local subset of a map layer.

Then you edited the new map layer—by cutting block groups to fit your Study Area almost perfectly—so you could display dataview statistics adjusted for the Study Area. Here again, you have learned a powerful technique with many applications. It can be used whenever you need to generate tailored data and statistics for your own community…without doing any math!

Exercise 2: Displaying Only Your Community

What You Will Learn in Exercise 2

In this exercise you'll learn how to create a map showing only the area of your choice, without the surrounding areas. This builds on Exercise 1. The exercise uses the City of Baltimore as the example to create a boundary layer of the city. Then, layers are added to show information pertaining only to the City. Finally, you will add the map as part of a new category to your Map Library. To do this exercise, you'll use the tools and skills you learned in the previous exercises:

- Use the Select by Pointing tool to select the city boundary as a map layer.
- Develop new layers showing just the city area.
- Add the resulting map to your Map Library.

Steps

There are three basic operations that you'll perform to develop your own map.

1. **Create a map showing the boundaries of the City of Baltimore.** You'll create this map by using the Map Library to open a General Purpose Map of Baltimore , then select and export the city boundary as a map layer.
2. **Create a geographic file showing only data within the Baltimore city area.** You'll add a new layer and export just the Baltimore portion as a geographic file, and add the file as a map layer.
3. **Add the Baltimore City Map to the Map Library.** You'll select the Location to Display, create a new map category, then place the city map in the Map Library.

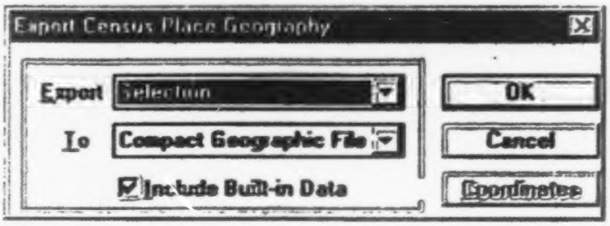
Creating the Map

1. In the Map Library, **make the following selections:**

   Location to Display = Baltimore
   Map Category = General Purpose Maps
   Map = Area Map

2. First, **make sure the active layer is the Census Place layer.** Next, **click the Select by Pointing tool** in the Maptitude tool box and **click anywhere inside the boundary of Baltimore City**. The Baltimore City area will be highlighted in red as the selected area.

3. **Choose *Tools - Export*** on the main menu. The Export dialog box will appear. **Make the choices below and click OK.**



Export Census Place Geography

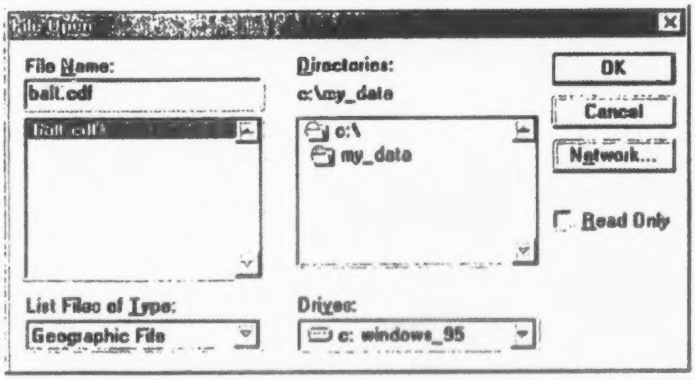
Export: Selection
To: Compact Geographic File
☑ Include Built-in Data

4. The Save As dialog box appears. **Save the geographic file as balt.cdf.**

5. Now that you've saved the selected city area as a geographic file, you won't need the original map. **Choose *File - Close All*** on the main menu.

Opening the geographic file as a map layer

6. **Choose *File - Open* or click on the File Open button** on the main tool bar. **Make the choices indicated below and click OK.**



File Name: balt.cdf

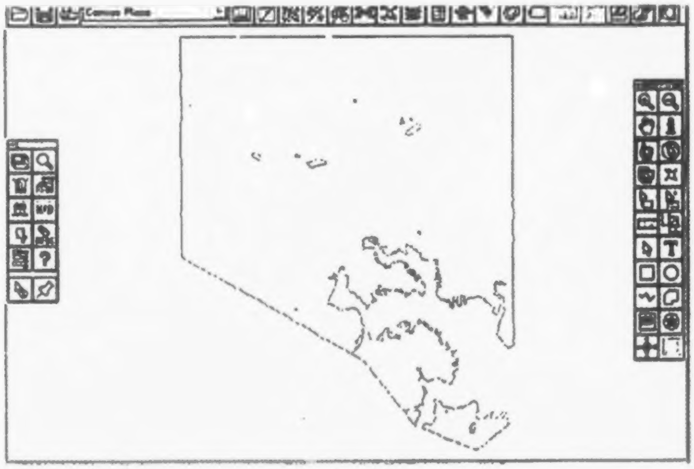
Directories: c:\my_data

c:\
my_data

List Files of Type: Geographic File

Drives: c: windows_95

7. **Maximize your map window.** The map should now look like this:



8. **Click on the Map Layers** button on the main tool bar. **Click Rename** and **type "Baltimore"** into the text box provided, and **click OK.**
9. Remaining in the Layers dialog box, **click Style.** Change the **Fill** Style from **None** to **Solid**. Then, **change the Fill Color** to a **light** yellow, then **click OK. Close the Layers dialog box.**

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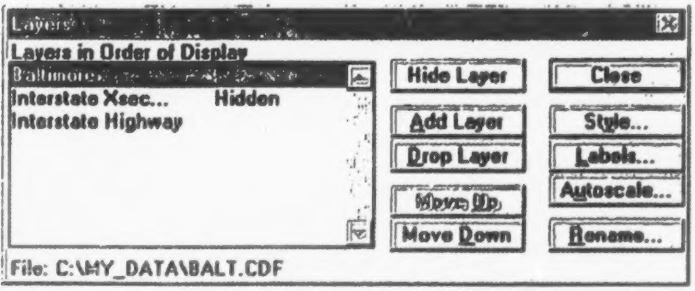
10. **Choose *File - Save As*** on the main menu, **and name the file balt.map. Save** the file in **C:\My_data**.

Adding a New Layer to the Map

Now that you've saved the city area of Baltimore as a map, you'll select additional layers from the CD-ROM Drive to add to your map. The next eight steps call out actions to add the interstate highway layer to your map. You can use these same steps to add any layer to your map.

11. **Click on the Map Layers** **button** on the main tool bar. **Select the Add Layer button.** Be sure to choose the drive where your CD-ROM is located, then **select cclshwy.cdf**. The Layers dialog box should look like this:


Layers
Layers in Order of Display
Hide Layer
Close
Add Layer
Style...
Drop Layer
Labels...
Autoscale...
Move Up
Move Down
Rename...

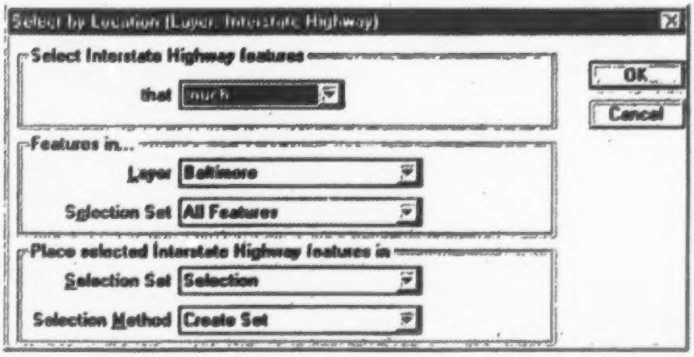
Baltimore
Interstate Xsec... Hidden
Interstate Highway

File: C:\MY_DATA\BALT.CDF

Note that the Interstate Highway layer has an additional hidden layer called Interstate Xsec.... which always accompanies the Interstate Highway layer.

12. **Click on the Close Button** to redraw your map with the Interstate Highways layer added.

13. **Choose *Dataview - Select by Location*** from the main menu. The Select by Location dialog box will appear. **Make the choices indicated below and click OK.**



Select by Location (Layer: Interstate Highway)

Select Interstate Highway features

that: touch

Features in...

Layer: Baltimore

Selection Set: All Features

Place selected Interstate Highway features in

Selection Set: Selection

Selection Method: Create Set

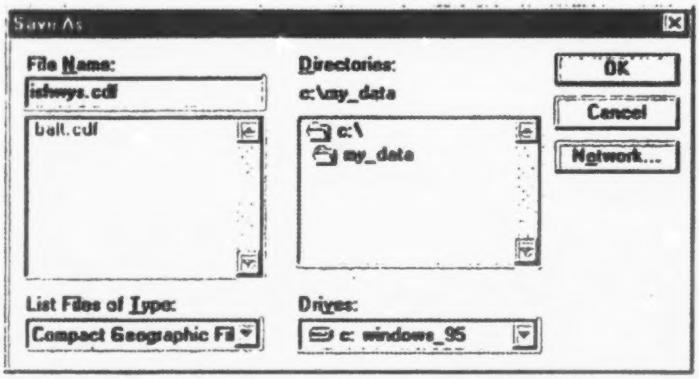
14. The Interstate Highways selected will appear in red. To improve the appearance of your map, you may wish to select additional sections of the Interstate Highways just outside the boundary of the City. To do this, **click the Select by Pointing tool while *holding down the Shift key*** to add these highway sections to your map.

Saving the Interstate Highways as a Geographic File

Now that you've selected the Interstate Highways for the Baltimore area, you can "Export" (save) them as a geographic file that you can use as a layer on your maps.

15. **Choose *Tools - Export*** from the main menu. The Export dialog box will appear. Save the Interstate Highways as a Compact Geographic File by accepting the defaults which appear in the Export dialog box . **Click OK.**

16. The Save As dialog box appears. **Make the choices indicated below and click OK.**



File Name: ishwys.cdf

balt.cdf

Directories: c:\my_data

c:\
my_data

List Files of Type: Compact Geographic Fi

Drives: c: windows_95

Adding the Interstate Highways Map Layer

Now that you've save the selected interstate highways as a geographic file, you'll add the file to your map as a layer so you can display it. Since you won't need the original Interstate Highways layer, you'll drop that layer first.

17. **Click on the Map Layers button** on the main tool bar. **Select the layer Interstate Highways** and **click the Drop Layer button**. Don't close the Layers dialog box.

18. Next – while still in the Layers dialog box – **click the Add Layer button**.

19. The File Open dialog box will appear. **Select the geographic file "ishwys.cdf"** that you just created (it should be in the "my_data" subdirectory on your C: drive) then **click OK.**

20. Make sure Interstate Highway is your working layer, and **click the Style... button** in the Layers dialog box. **Change the interstate highways** to look the way you want. When you've finished, **click OK**. Then close the Layers dialog box to redraw your map.

21. **Choose *File - Save* or click on the File Save button** on the main tool bar to save your work.

Adding Your Map to the Map Library.

When you have finished your map, you can add it to the Map Library for easy access later. You probably will want to modify the map again in the future to display additional features. To do this, you will want to save the modified map under a new name. Also, by creating a new map category in the Map Library, you will have a quick and orderly way to display all your maps from one access point.

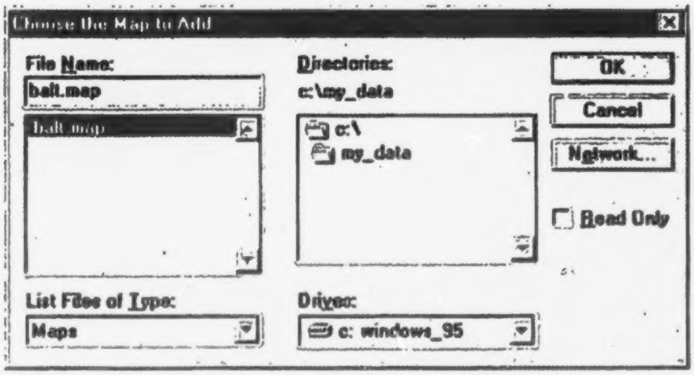
22. **Choose *HUD - Map Library* or click the Map Library** button in the HUD tool box.

23. The Map Library dialog box is displayed. The dialog box includes a list of markers under Choose the Location to Display. Since you began the process of making your own maps by choosing the "Baltimore" marker, you will want to **select this same marker**. Remember, you have not changed this marker from its original setting. Don't close the Map Library dialog box.

24. Next – while still in the May Library dialog box – **click the Content button** located at the bottom center of the dialog box.

25. Adding your own category to the Map Library provides you with a orderly filing system for storing and quickly accessing your maps for display. **Click on the Add button** located at the top right corner of the dialog box. The Add a New Category dialog box will appear. **Type Baltimore Maps, then click OK.**

26. Now **click on the second Add button** located midway on the right side of the dialog box. The Choose a Map to Add dialog box will appear. **Make the selections at they appear below, then click OK**. Don't close the Map Library dialog box.



File Name: balt.map
balt.map
Directories: c:\my_data
c:\
my_data
List Files of Type: Maps
Drives: c: windows_95

27. Next, under Map Settings at the bottom section of the Choose a Map to Add dialog box, **highlight "New Map" and type**

Baltimore City Map, then **click OK**. A Confirm dialog box will appear. **Click the Yes button** to add this map to your Map Library.

Wrapping Up

In this exercise you've learned how to use many of the tools and techniques you learned in previous Chapters to create a map showing only the area of your choice, without the surrounding areas.

Chapter Six Summary Questions

1. You are able to determine the population characteristics of any area you define. True or False
2. You can modify any map layer as long as it is saved as a Compact Geographic File. True or False
3. List three custom maps that you would need to create relevant to your work.
4. The Map Library can be used as a way to file and organize your maps. True or False
5. You can add your own map categories and maps to the Map Library using the ___________ button.

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CHAPTER

7

Using the Software to Prepare Your Consolidated Plan

Introduction

The Consolidated Plan Grantee Version of Community 2020 is provided to you, a HUD grantee, so that you can research and organize the information that you need when submitting your Consolidated Plan and annual Action Plans. Grantees are able to present large amounts of complex planning information in a way that the people they serve can easily understand. This chapter explains how to use the forms needed for preparing and submitting your projects and activities to HUD.

Problem Statement

You are a new hire at the planning department in City X. Your very first task is to prepare the necessary forms and documentation for your City's Consolidated Plan. Your supervisor has presented you with a new GIS software, Community 2020 and has giving you a 5-day deadline to complete a final draft. How do you get started?

Introducing the Grantee Version of the Software

What Is a Grantee?

The four major HUD/CPD programs assign different titles to those entities that receive funding through various HUD programs. For the purposes of the User Guide, a grantee is a recipient of any one of the four major HUD programs:

- Community Development Block Grant (CDBG)
- Emergency Shelter Grant (ESG)
- HOME Investment Partnership Program
- Housing Opportunities for Persons with AIDS Program (HOPWA)

A grantee is a community, city, urban county, consortium, or state receiving CPD

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grant funds. This also includes HOME participating jurisdictions as well as all Entitlement and Non-Entitlement grant recipients.

The Consolidated Plan

The Consolidated Plan serves as both the grantee's planning document and its application for funding under any of HUD's four major programs consisting of Community Development Block Grant (CDBG), the Emergency Shelter Grant (ESG), HOME Investment Partnership Program, and Housing Opportunities for Persons with AIDS (HOPWA). By replacing six planning and application submissions with a single document, the consolidated plan frees grantees from the overwhelming paperwork burdens that existed in meeting the requirements of the Comprehensive Housing Affordability Strategy (CHAS) and from the repetitive reporting of the same information that existed in the various application submissions.

The benefits derived from the Consolidated Plan exceed simple paperwork and regulatory reductions, however. They include the opportunity to have greater and more meaningful citizen participation in the actual development and implementation of strategies that, from a citizen's perspective, best meet the needs of their neighborhoods and the community-at-large.

Federal, state, and local governments are now beginning to fully appreciate the importance of community inclusion that brings together citizens, businesses, community-based organizations and other nonprofits. The very essence of consolidated planning is its comprehensive approach that encourages a grantee to collaborate with all local parties interested in community development to help the grantee identify the community's needs as well as strategies for meeting those needs.

The Consolidated Plan is a six-part document consisting of:

- Housing and Homeless Needs Assessment
- Housing Market Analysis
- Strategic Plan
- Action Plan
- Certifications
- Monitoring

Housing and Homeless Needs Assessment

A Housing and Homeless needs Assessment describes the grantee's five-year housing needs including an estimate of the number of families by income groups for both renters and owners that are in need of housing. The assessment also describes the nature and extent of homelessness within the grantee's community. Reference Sections 91.205, 91.305, and 91.405 of the January 5, 1995 Consolidated Submission for Community Planning and Development Programs; Final Rule.

Housing Market Analysis

A Housing Market Analysis describes the grantee's housing market, including an identification of racial/ethnic minorities and/or low-income family housing in concentrated areas. The analysis also asks for items such as the number and condition of public housing units, and an inventory of homeless and special needs facilities within the grantee's jurisdiction. The analysis also must include the grantee's explanation of whether the cost of housing or the incentives to develop or improve housing is affected by public policy or other barriers to affordable housing. Reference 91.210, 91.310, and 91.410 of the January 5, 1995 Final Rule.

Strategic Plan

A Strategic Plan is a composite of a grantee's priorities and an estimate of its allocation of resources for meeting its priorities. The plan contains a series of elements that the grantees are required to address both in a narrative form and through a priority need table as prescribed by HUD. For example, the grantee must identify its priority housing and community development needs by ranking them as high, medium, low or no such need and provide the estimated units produced by the identified priority as well as the dollars needed to address that particular priority.

The plan also calls for the grantee's description of its strategies for removing barriers to affordable housing, for evaluating and reducing lead-based paint hazards, for reducing the number of poverty level families, and for enhancing coordination between public and assisted housing providers and private and governmental service agencies. Reference Sections 91.215, 91.315, and 91.415 of the January 5, 1995 Final Rule.

Action Plan

An Action Plan is an annual description of the grantee's federal and other resources that are expected to be available to address its priority needs and how the federal funds will leverage other resources. The description will also include the activities that the grantee will undertake during the next year to address its priority needs. The plan also explains where the assistance will be directed by geographic area during the ensuing program year. Reference Sections 91.220, 91.320, and 91.420 of the January 5, 1995 Final Rule.

Certifications

A grantee is required to submit certifications relating to fair housing, its antidisplacement and relocation plan, a drug-free workplace and other statutory and program requirements. Reference Sections 91.225, 91.325, and 91.425 of the January 5, 1995 Final Rule.

Monitoring

Monitoring in the form of a narrative describes the standards and procedures that the grantee will use to monitor activities that it will carry out in advancing its plan. Reference Sections 91.230, 91.330, and 91.430 of the January 5, 1995 Final Rule.

Submission Dates

Generally, the grantee should submit its Consolidated Plan to HUD at least 45 days before the start of the grantee's program year, except in cases involving a newly eligible jurisdiction under the HOME program and where HUD grants an extension for good cause. However, under no circumstances will HUD accept a submission earlier than November 15 or later than August 16 of the Federal fiscal year for which the grant funds are appropriated. Failure to submit the plan by August 16 will automatically result in the grantee's loss of its CDBG funds.

The grantee's action plan and certifications must be submitted on an annual basis with the complete Consolidated Plan submission according to a period specified by the grantee, but in no case will that submission be less frequent than every five years. Reference Sections 91.15 of the January 5, 1995 Final Rule.

Preparing Consolidated and Action Plans

The Grantee Version of the software lets you identify yourself as a particular grantee, and then manage your information about HUD programs and projects. This is done with a series of forms, which make it easy to enter, review, and update the information needed for the Consolidated Plan or an Action Plan. You will also learn how to use existing CPS 1.0 data and how to locate your projects.

Submitting a Consolidated Plan or Action Plan

Computerizing the information in the Consolidated Plan has been one of the major accomplishments of HUD's planning process. The Consolidated Planning System is intended to support CPD's consolidated reporting requirements for the programs and to simplify the grant management process for all participants. When correctly used, the system will:

- Reduce the time necessary to produce reports
- Provide more cost-efficient reporting
- Increase the meaningfulness of the reported information
- Facilitate required reporting to Congress on activities and accomplishments
- Reduce duplication in reporting efforts

Through the software, grantees can organize and present large amounts of complex planning information, using computerized forms that citizens can easily access and understand. For the first time, interested parties do not have to be professional urban planners to understand data affecting their neighborhoods.

This computerized system has had considerable grantee input. It is also designed to be user-friendly, so that even the most inexperienced computer operator will be able to easily enter the needed information on the following forms.

SF-424 Form

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This form is required for each of the programs that is part of the grantee's Consolidated Plan. The grantee must submit a separate form for each of the following HUD programs:

- CDBG
- ESG
- HOME
- HOPWA

This form has five pages, with information pertaining to the grantee:

- Applicant: grantee's legal name, its address, contact name and telephone number, type of applicant, etc.
- Submission: application type, submission type, various submission dates, etc.
- Project: descriptive title of project, areas affected by project, etc.
- Funding: cites federal, state, local, or other type of funding, congressional district of applicant, etc.
- Authorization: name and title of authorized representative

Proposed Projects Form

This is a two-part form in which the grantee identifies for each of its proposed projects the related priority need(s) that it has established over its five-year Consolidated Plan. The grantee selects its identified need from a list of twelve priority need categories. The need categories are: Housing, Homeless/HIV/AIDS, Public Facilities, Infrastructure, Senior, Youth, Anti-Crime, Economic Development/Opportunity, Public Services, Planning/Administration, Non-Homeless, and Other.

The second part of the screen shows the link between the priority need(s) identified in the first part of the screen and the grantee's proposed project and its corresponding project activities. The screen also shows the project's location and the grant funds requested as well as prior year and other funds available for the proposed project/activity project. Other project information includes accomplishments and the type of recipient.

Priority Needs

This form reflects the grantee's housing, community development and special (non-homeless) needs, over the five-year period of the grantee's Consolidated Plan. The form allows the grantee to prioritize its needs as high, medium, or low and to estimate the number and type of families in need of housing assistance for extremely-low income, low income, moderate income, and middle income families, renters, and owners. The form also allows the grantee to categorize housing conditions and cost burdens of the families targeted for assistance.

NOTE: States are not required to do a priority needs table for community development, but many opt to do a narrative on their community development needs instead.

Support of Applications by Other Entities

This table measure the level of support grantees are willing to give to the other entities (e.g. monopolies) eligible to apply for funding under various HUD programs. This is done by the grantee responding to the question "Will you support applications by other entities?" The grantee answers this question by checking Yes or No next to a list of competitive programs, such as HOPE 1, Rental Vouchers/Certificates, Sec. 811 Handicapped.

Gaps Analysis Form

This form provides an analysis of the grantee's unmet homeless housing needs, or "gap" by comparing the grantee's current inventory of homeless facilities to the number of estimated housing units that the grantee determines as necessary to fully meet its local housing needs. The form categorizes three types of homeless housing (emergency shelters, transitional and permanent housing) and then the three types of housing according to the sub-categories within the homeless population. These sub-categories are chronic substance abusers; seriously mentally ill; dually-diagnosed; persons with HIV/AIDS; victims of domestic violence; persons with other disabilities; and the general homeless populations. The form allows the grantee to assign a relative priority of high, medium, or low to the general population and to each of the sub-categories that the grantee has designated as an "unmet housing need/gap."

Funding Sources Form

To facilitate the public's understanding of a grantee's planning decisions, the form has been developed to reflect the grantee's total funding resources and its total proposed projects/activities. Consequently, this form provides information on the grantee's current fiscal year entitlement grants, which consists of funds from one or more of the following four CPD programs: Community Development Block Grant (CDBG), Emergency Shelter Grant (ESG), HOME Investment Partnership Program and the Housing Opportunities for Persons with AIDS Program (HOPWA).

The form also requires the grantee to enter any reallocated funds that it received from one or more of the four CPD program grants. For the purposes of the CDBG program only, the form requires that the grantee report prior year program income and reprogrammed prior years' funds. CDBG prior year program income is defined as income that has accrued to the grantee during the previous program which has not been programmed or included in the grantee's prior reports on funding sources. CDBG reprogrammed prior year funds is defined as commitments made in whole or in part to a particular activity or activities, but then are recommitted, in whole or in part, to another activity or activities.

On this form, the grantee reports the total of its estimated program income that it receives not only from the four CPD programs, but from its other funding sources as well (e.g. general tax revenues). Because other income and estimated program income funds may originate from different sources, the grantee is required to enter the description along with its and subrecipient amounts. The grantee must also report the total allocations it received under the Section 108 Loan Guarantee fund and any other funds, such as local, state, and private, that may be available as funding resources for the grantee's proposed projects during a particular program year.

NOTE: Both the totals for funding resources and proposed projects should equal.

State Method of Distribution

This form applies to State grantees only and represents a State's Action Plan. It reflects the State's various program funds, such as CDBG HOME, and how these funds will be distributed (e.g. competitive or formula grants) to its subrecipients. Additionally, the form indicates the minimum and maximum amounts that the grantee cites for each method of distribution.

CHAPTER

8

Printing Your Maps

Introduction

This software offers a variety of options and tools for producing printed documents with your maps. You can simply print your map as it appears on screen, or you can create and print a more complex *layout*—a page design incorporating different maps and dataviews, and enhanced with titles, labels, and graphics.

The software also works with other tools that you already know how to use. If you use software for word processing, presentations, graphics or design, you can save your maps and dataviews in various graphics formats that can be used in those applications.

What You Will Learn in Chapter 8

In these exercises you'll learn how to:

- ***Print an on-screen map.***
  You'll learn how to quickly print any open map.
- ***Print maps in a layout.***
  You'll learn to use the layout tools to create a page design incorporating different maps, dataviews, and labels on the same page.

Requirements for Chapter 8

The exercises in this chapter assume that you've read Chapter 1 and performed the exercises in Chapter 2. It is also assumed that you have a printer connected to your computer (or network).

In This Chapter

Introduction 8-1
Exercise 1: Printing Your Map as it Appears On-Screen 8-2
Exercise 2: Printing Your Maps in a Layout 8-6

Exercise 1: Printing Your Map as it Appears On-Screen

Introduction

Any map or dataview can be easily printed as it appears on screen. This can be useful for quick, informal output.

When you choose ***File – Print*** from the main menu (with no special options selected), a copy of the map in the active window will be printed. The software will automatically shrink or enlarge the map to the margins of your page. When you don't need to create a more formal document—such as a report, proposal or presentation—printing your on-screen map is the fastest, most practical way to get a "hard copy" of your map.

What You will Learn in Exercise 1

In this exercise you'll learn how to:

- Print an on-screen map that automatically resizes to fit your page size
- Choose the orientation of your printed page

Steps

Printing Directly from a Map Window

There are typically just three steps that you'll perform before printing a map as it appears on screen: opening the map, resizing the window if necessary, and using the pan and zoom tools to center your target area.

In the first part of this exercise you'll print a map of a small neighborhood area, such as you might use to give driving directions.

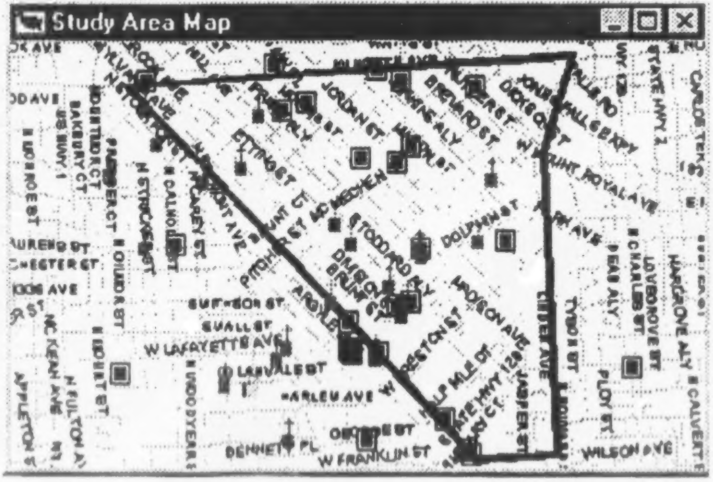
Opening the Map

1. Open the Study Area map you created in Chapter 2 (if you don't have this map, choose a street map, such as "Road Map," from the map library).

Resizing the Map Window

2. Unless your map already looks like the one below, you should resize your map on-screen by clicking-and-dragging the lower right corner of the window. Give your map window proportions roughly similar to a sheet of letter-sized paper on its side, at about the size shown below:

TIP
To recenter or increase the scale of your map, refer to Steps 14 and 15 of Exercise 1, Chapter 2.


Study Area Map
JORDAN ST
DOLPHIN ST
W LAFAYETTE AVE
W FRANKLIN ST
WILSON AVE
MADISON AVE
CARLOS TERE
HARGROVE ALY
CALVERT E
APPLETON ST
N FULTON AV
DENNETT PL
HARLEM AVE

FYI
You may eventually need to open and print your map from a computer other than the one where the map was originally created.

In that case, the second computer will need to hav the CD-ROM or have the same file structure as the software installed on it—unless you the software is installed on a file server (see page 357 of the Maptitude User's Guide).

This is because a map file does *not* contain the geographic data for a map. A map file includes only information specific to the map—for example, style information.

Printing the Map

3. Select ***File – Print*** from the main menu. The Print dialog box appears.

   Because your map is wider than it is tall, you're going to change the orientation of the printed page in the Print dialog box. This will allow the map to make full use of the space on the page.

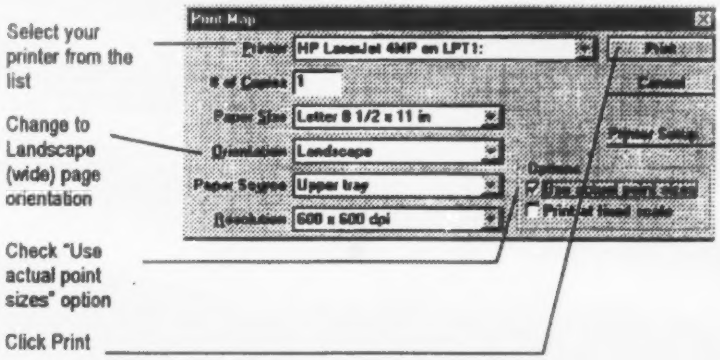
   Also in the print dialog box is a check-box option labeled "Use actual point sizes." If this option is not checked, when the software resizes the map to fit the page, all of the map features, label text and so on, are also resized. But with this option checked, map features like street names will stay at the size set for the on-screen version of the map—no matter how much your map is enlarged (or shrunk) to fit the page.

DEFINITIONS

Portrait: page oriented vertically.

Landscape: page oriented horizontally.

4. Change the page orientation to "Landscape" to make efficient use the paper and choose "Use actual point sizes."



Printer: HP LaserJet 4MP on LPT1:
# of Copies: 1
Paper Size: Letter 8 1/2 x 11 in
Orientation: Landscape
Paper Source: Upper tray
Resolution: 600 x 600 dpi
Options:
☑ Use actual point sizes
☐ Print at fixed scale

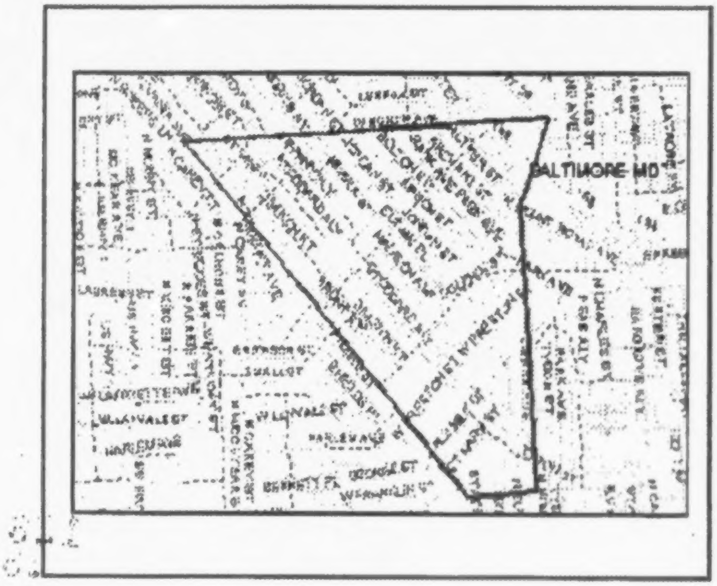
Select your printer from the list

Change to Landscape (wide) page orientation

Check "Use actual point sizes" option

Click Print

Your printed map should resemble the illustration below:



Wrapping Up

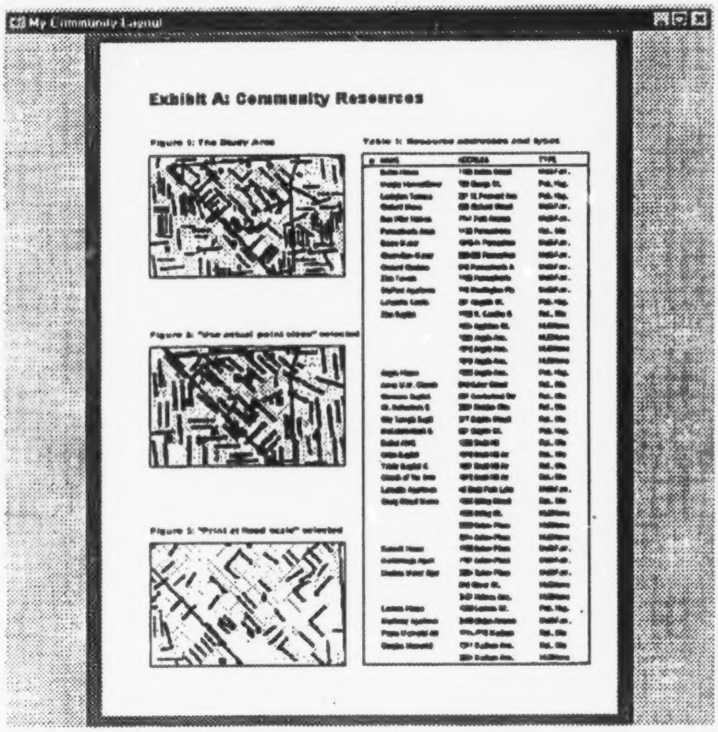
You've just learned a quick and easy method for printing any map you are viewing on screen. You've also learned how to change the page orientation to make the best use of the page size and how to choose whether or not map features are resized when the software resizes your map to fill the page.

For simply printing out a hard copy of your map, the steps you've just learned are often all you'll need to know. But for more formal documents, such as proposals, reports, and presentations, you should take advantage of the Layout tools. You'll learn about them next, in Exercise 2.

Exercise 2: Print Your Maps in a Layout

Introduction

In the previous exercise you learned how to quickly print a single map on a page. But with the Layout feature, you can design a page containing one or more maps—and dataviews—at any size and position on the page. Your layout elements can also include titles, call-outs, and graphics created in other programs. You can save your layout as a reusable template, with your standard graphics, placeholder text boxes, and empty frames to hold maps or dataviews.



What You Will Learn in Exercise 2

In this exercise you'll learn how to:

- Create a layout and specify layout settings
- Place frames, maps, dataviews, text and graphic elements in your layout
- Use the layout tools to arrange elements in your layout
- Choose options for automatically resizing the map and map features when you place them in your layout

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Steps

Layout Essentials

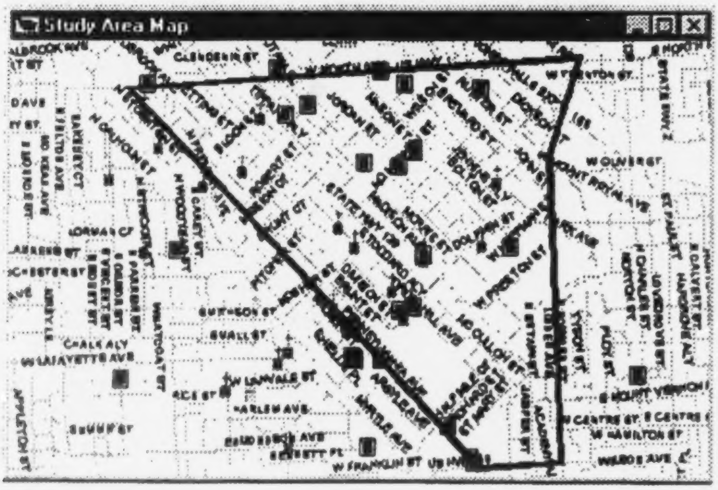
There are just four basic steps to creating a layout:

1. **Open maps.**
   Any map (or dataview) that you will want to add to your layout must be open in order to place it in a layout.
2. **Create a new layout and specify layout settings.**
   When you select the New Layout command, you are automatically asked to choose various layout settings. These include the name for the layout, the number of pages, the paper size and orientation, and the type of printer you'll be using.
3. **Place layout items.**
   You'll place everything you need to communicate in your layout: the maps and dataviews (and the frames that hold them), text (such as labels) and graphic elements (such as lines).
4. **Arrange and adjust layout items.**
   You'll adjust the size, style, placement and alignment of the layout elements until the layout looks the way you want it to.

Once you've completed these steps, your layout is ready to print. (Don't forget to save your work as you go along.) You'll work through all of these steps in the following pages to recreate the "Exhibit A" layout shown on the previous page.

Opening a Map

1. Open the Study Area Map that you created in Chapter 2 and used in the previous exercise. As in Exercise 1, click-and-drag the lower right corner of the map window to give it roughly the proportions shown below.



FYI
You can open the Layout Settings dialog box to change your layout settings at any time.

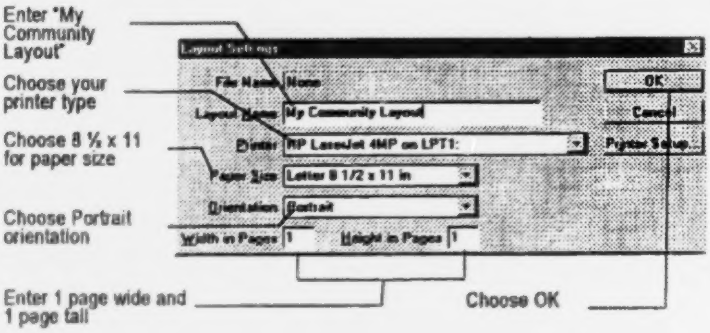
With the layout open, just click on the Layout Settings button on the main toolbar.

DEFINITIONS
Portrait: page oriented vertically.

Landscape: page oriented horizontally.

2. Choose ***Window – New Layout*** from the main menu.

3. The Layout Settings dialog box appears. Make the selections indicated below and click OK.



File Name: None
Layout Name: My Community Layout
Printer: HP LaserJet 4MP on LPT1:
Paper Size: Letter 8 1/2 x 11 in
Orientation: Portrait
Width in Pages: 1
Height in Pages: 1

Enter "My Community Layout"

Choose your printer type

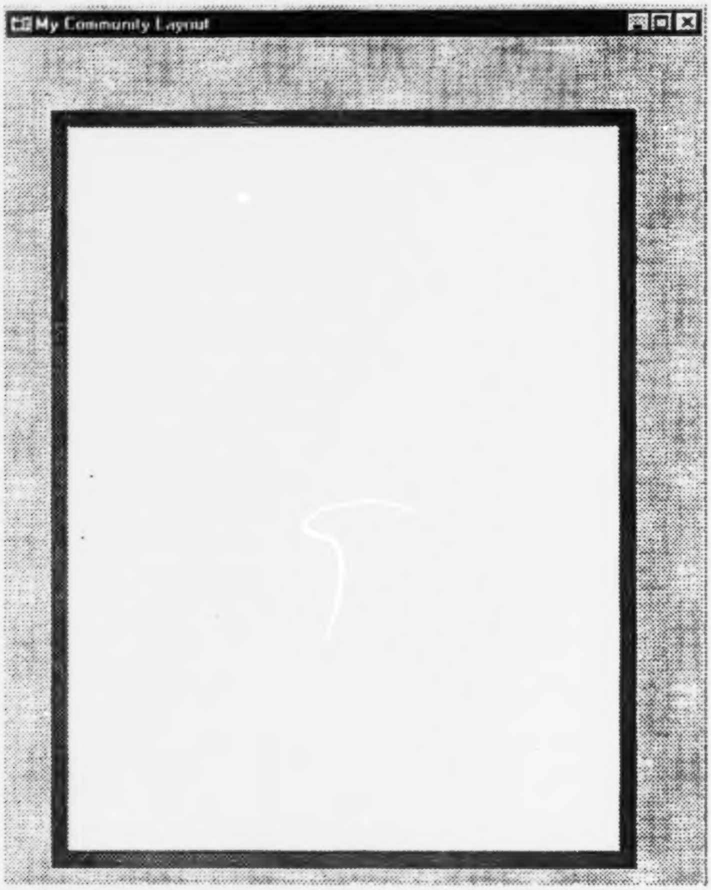
Choose 8 ½ x 11 for paper size

Choose Portrait orientation

Enter 1 page wide and 1 page tall

Choose OK

The My Community layout window appears.

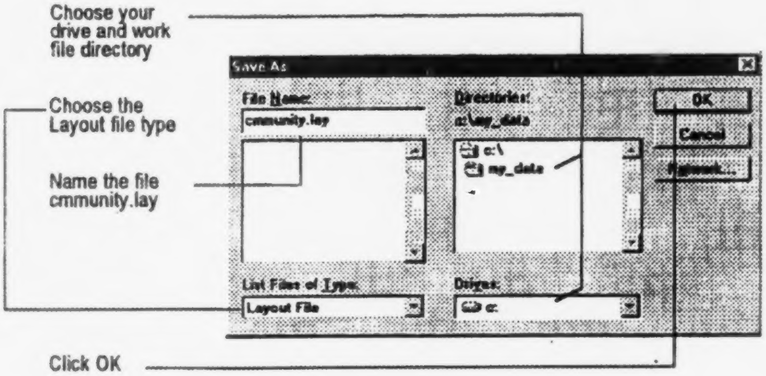


You now have a blank layout. Now is a good time to save your new layout.

Saving Your Layout File

4. Select ***File – Save*** from the main menu.

5. The File Save dialog box appears. Make the selections below and click OK.


Save As
OK
Cancel
Network...

Choose your drive and work file directory

Choose the Layout file type

Name the file cmmunity.lay

Click OK

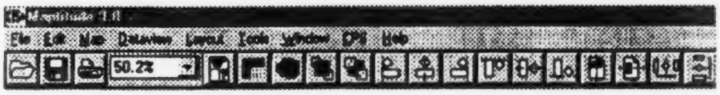
File Name: cmmunity.lay

Directories: c:\my_data

List Files of Type: Layout File

Drives: c:

Notice that the main toolbar has changed: the map and dataview tools have been replaced by layout tools. You'll learn how to use some of these throughout this exercise.

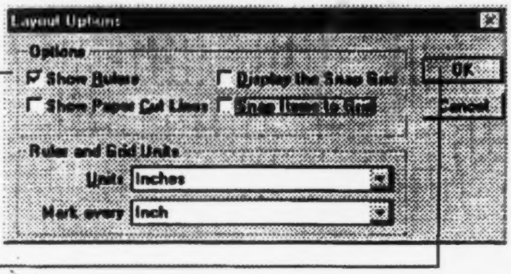

File Edit Map Dataview Layout Tools Window GIS Help
50.2%

Now you're ready to start placing elements in your layout. To help you place your layout elements accurately, the software lets you show rulers and grids on your layout window.

6. Click the Layout Options button on the main toolbar.

7. The Layout Options dialog box appears. Select Show Rulers and click OK.

FYI
Rulers and grids show on screen, but not on your printed output.


Layout Options
Options
Ruler and Grid Units
OK
Cancel

Choose Show Rulers

Click "OK"

☑ Show Rulers
☐ Display the Snap Grid
☐ Show Paper Cut Lines
☐ Snap Items to Grid

Units: Inches

Mark every: Inch

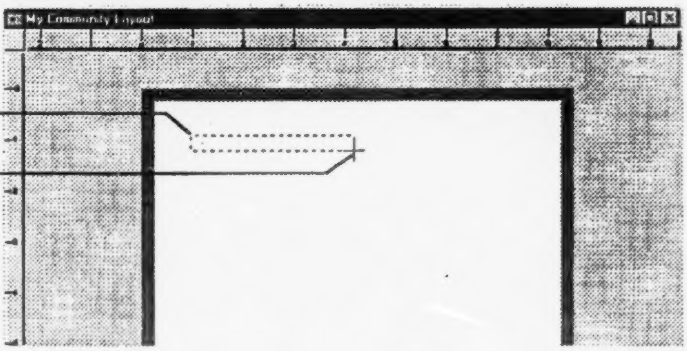
Placing a Title in Your Layout

Since text is the easiest thing to add to your layout, the first layout element you'll add will be a title.

TROUBLESHOOTING TIP
If your layout window looks different (e.g., the top of the page appears attached to the ruler), select ***Layout – Entire Layout*** to make the contents of the layout window appear as it does in the illustration to the right.

8. Click the Text tool button T on the main toolbox. Clicking and dragging on your layout with this tool defines a text area, such as the title you are creating. Text that you type will be scaled automatically based on the size of the text area rectangle.

9. Beginning about one inch from the left edge of the page and one inch from the top, click-and-drag a rectangle about four inches long and a quarter inch high. Don't worry about being precise here, because you will reposition the title later.



Click here...

...drag to here, and release the mouse button

10. When you release the mouse button, one of two things may happen: a blinking text insertion point will appear in the new text box, or the Freehand Text dialog box will appear (see illustration below). In the former case, type right on the layout, then click in the text box. Otherwise, type the title in the dialog box and click OK.

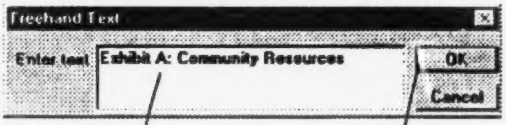
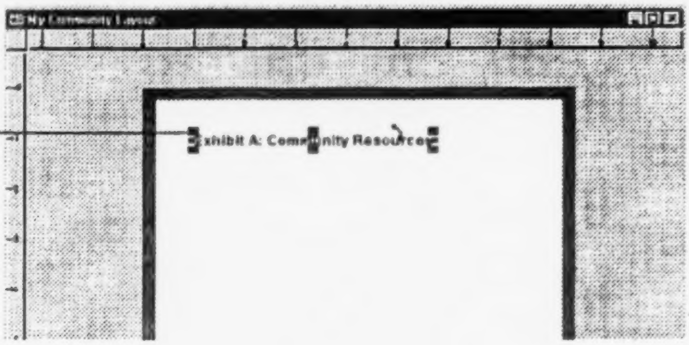


Exhibit A: Community Resources

Type the title "Exhibit A. Community Resources"

Click OK

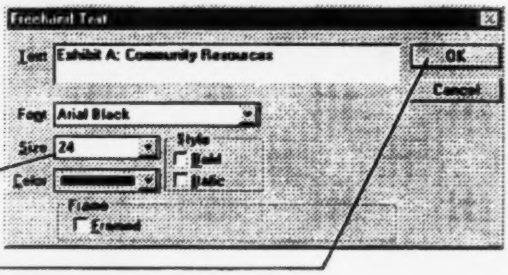
Your title appears on your layout, with "handles" for adjusting size and rotation. If the handles don't appear and you want to use them to resize the text, click once on the text with the select the Pointer tool


My Community Layout
Exhibit A: Community Resources

Handles for resizing and rotating the text

11. Select the Pointer Tool from the main toolbox and double-click on the title text box.

12. Another Freehand Text dialog box appears. This dialog box allows you to set the characteristics of your text, such as size, color, font, and you can even edit the text right in this dialog box. For now, just set the title's font size to 24 points and click OK.


Freehand Text
OK
Cancel
Style
Frame

Text: Exhibit A: Community Resources

Font: Arial Black

Size: 24

Color:

☐ Bold

☐ Italic

☐ Framed

Choose 24 points

Click OK

Placing a Map in Your Layout

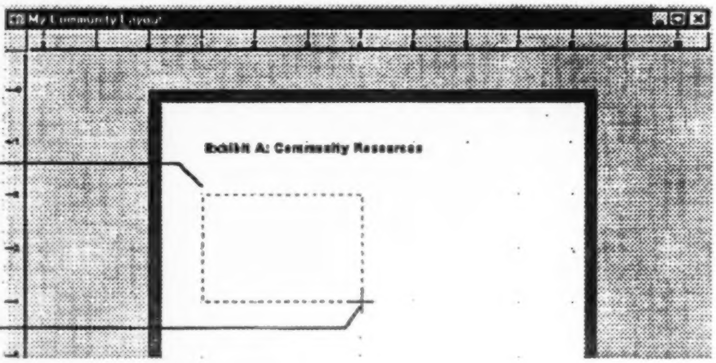
There are two ways to place a map in your layout: directly, or in a "frame." The first method is more straightforward, while the second is more flexible—so in the next few steps you'll learn both methods.

To help you size and position your frames as you place them in your layout, you'll use the layout grid option. This option places a grid of evenly-spaced dots as reference points for your placement

13. Click the Layout Options button on the main menu, and in the Layout Options dialog box (see Step 7) and choose Display the Snap Grid. Make sure the "Ruler and Grid Units" are set to "Inches," and "Mark every" is set to "Inch." Then click OK.

    A grid of gray dots, spaced one inch apart, will appear on your layout.

14. To place a map in a layout directly, select the Place in Layout tool on the main toolbar. Then, using the layout grid as a guide, click-and-drag a rectangle two inches by three inches—roughly the same proportions as the Study Area Map that you opened and resized at the beginning of this exercise.



Click here...

Drag three grid points to the right and two grid points down

The Add to Layout dialog box appears. The dialog box shows a list of all of the open maps and dataviews that you can choose to add to your layout. Below the list are two options: "Use actual point sizes," and "Print at fixed scale."

It's important to understand how these options change the way your maps are printed. So in the following steps you'll place three different copies of the Study Area map in the same layout—one copy with neither option selected, and one copy with one of the two options selected—so you'll be able to make a side-by-side comparison at the end of this exercise.

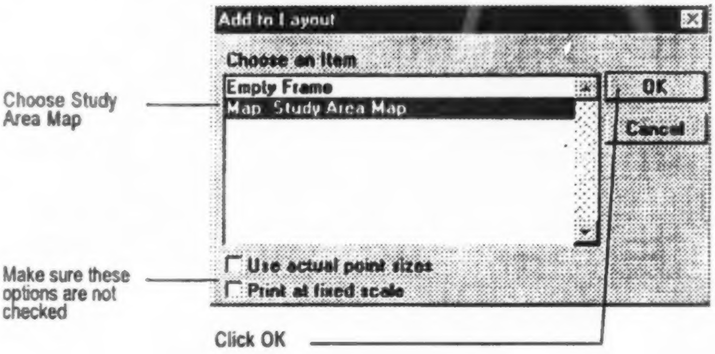
FYI
The maps and dataviews placed in a layout *are copies of the originals*.

Once you place a map in your layout, any changes you make to the original map file will *not* be reflected in the copy that appears in your layout.

However, changes to the underlying data in a map *are* reflected in the copy placed in a layout.

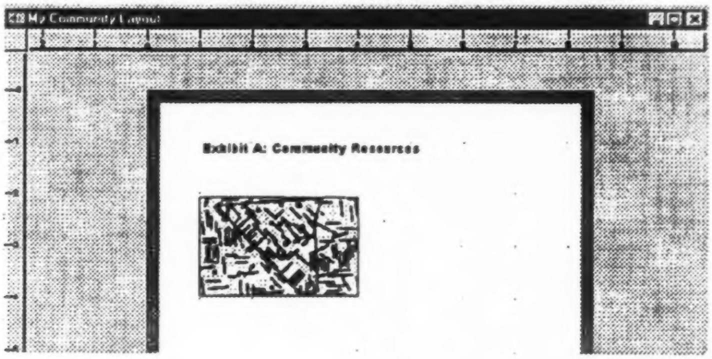
For example, this means that if you changed the color or size of the symbol representing a hospital, th change would not be reflected in your layout. But if you deleted that hospital from the geographic file, it would disappear in the layout.

15. Choose Map: Study Area Map and click OK.



☐ Use actual point sizes
☐ Print at fixed scale

A miniature version of the Study Area Map appears in your layout.



TROUBLESHOOTING TIP
If you left the legend showing in the map window, it will appear in the layout area, too. Choose the Pointer tool, click the legend in the layout once to select it, then press the Delete key.

Using Frames in Your Layout

You have just seen the simplest way to add a map to your layout: clicking and dragging with the Place in Layout tool, and selecting a map from the list of open maps. The other method, placing your map or dataview in a "frame," adds just one step—but gives you much more flexibility.

The advantage of frames is clear: frames can be reused. For example, you can delete a map from a frame, and choose another map to fill it. You can create duplicates of one frame, and put different maps in each one—that

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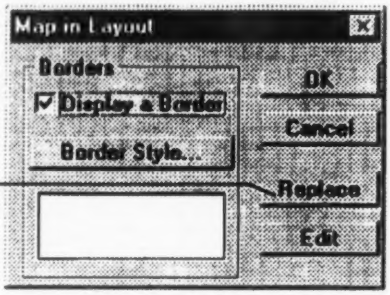
way, each map has exactly the same dimensions. And as you'll see later, you can create a template of your layout using frames, so that a new report or presentation can be created by simply adding maps and other elements in a pre-designed set of frames.

Adding a frame is simple: when you use the Place in Layout tool, just select "Empty Frame" in the Add to Layout dialog box, instead of a particular map. You can decide later what map to put in the frame.

Next you're going to use the frame feature to add three identically-sized maps to your layout.

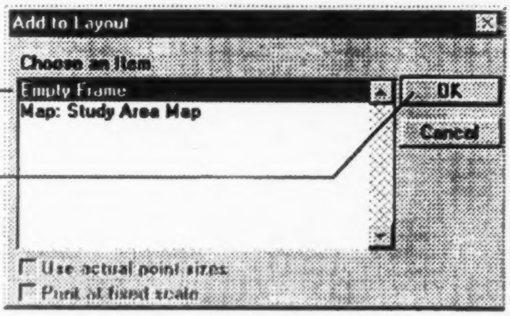
16. Select the Pointer tool and double-click the map you just placed on the layout.

17. The Map in Layout dialog box appears. Click **Replace.**


Map in Layout
Borders
☑ Display a Border
Border Style...
OK
Cancel
Replace
Edit

Click Replace

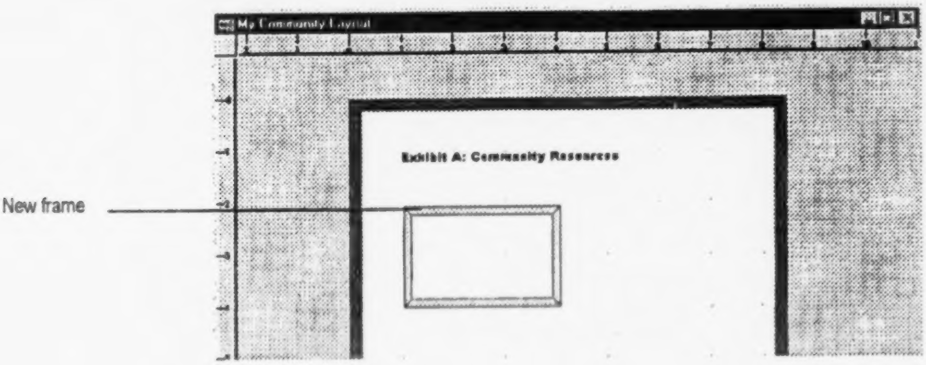
18. The Add to Layout dialog box appears. Select Empty Frame and click OK.


Add to Layout
Choose an Item
Empty Frame
Map: Study Area Map
OK
Cancel
☐ Use actual point sizes
☐ Print at fixed scale

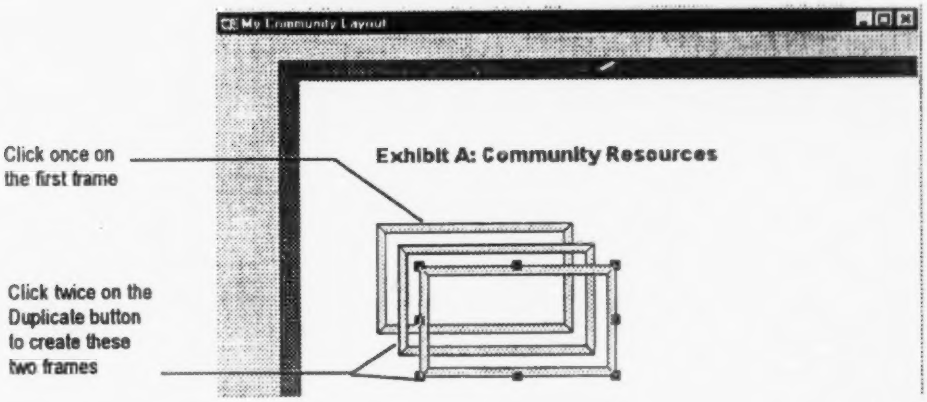
Choose Empty Frame

Click OK

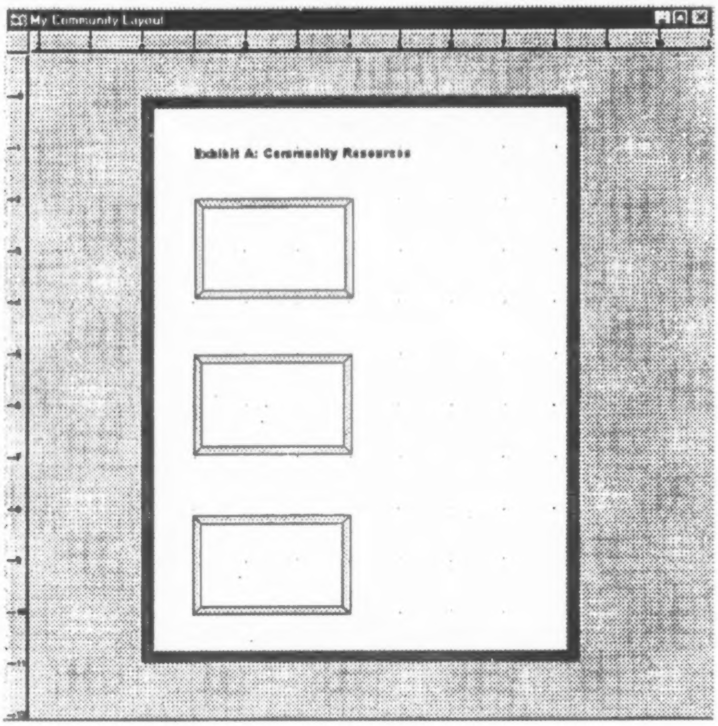
The map is now replaced on the layout by a frame that's the same size as the map.


My Community Layout
Exhibit A: Community Resources
New frame

19. Click once on the frame to select it. Click twice on the Duplicate button on the main toolbar. Two new frames appear over the first frame.


My Community Layout
Exhibit A: Community Resources
Click once on the first frame
Click twice on the Duplicate button to create these two frames

20. With the pointer tool, drag the two new frames below the first frame and position them roughly as shown in the illustration below. Use the grid points to space the frames one inch apart.



Add to Layout Options: *Use actual point sizes* and *Print at fixed scale*

Next you'll fill each frame with a slightly different version of the Study Area Map. Each of the three maps will show a different printing effect of the check-box options in the Add to Layout dialog box.

First you'll place a map on your layout with neither option selected.

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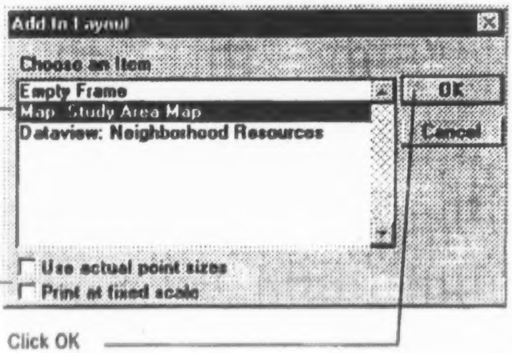
21. Double-click on the first frame with the pointer tool. The Add to Layout dialog box appears. Make the selections below and click OK.



Add to Layout

Choose an Item

Empty Frame

Map: Study Area Map

Dataview: Neighborhood Resources

☐ Use actual point sizes

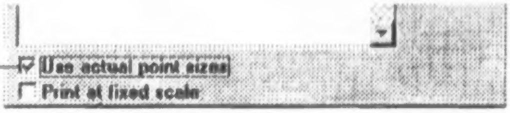
☐ Print at fixed scale

Choose Study Area Map

Make sure these options are not checked

Click OK

22. Double-click the second frame. When the Add to Layout dialog box appears, choose the Study Area Map, choose "Use actual point sizes," and click OK.

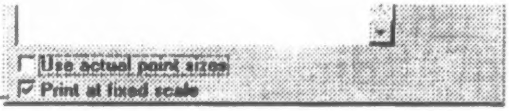


☑ Use actual point sizes

☐ Print at fixed scale

Choose Use actual point sizes

23. Double-click the third frame. When the Add to Layout dialog box appears, choose the Study Area Map, choose "Print at fixed scale," and click OK.

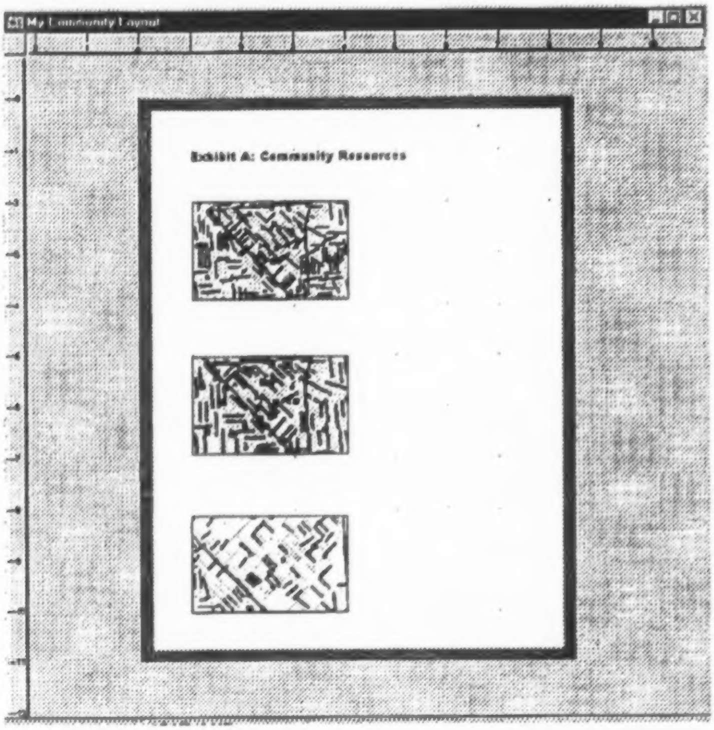


☐ Use actual point sizes

☑ Print at fixed scale

Choose Print at fixed scale

Now all three frames should have the Study Area map in them, but each should look a little different from the others. Later in the exercise you'll learn what these differences mean.



Adding a Dataview to Your Map

In Exercise 3 of Chapter 2, you used a dataview to add a table of data to the Study Area Map. Each row of the table represented a neighborhood resource.

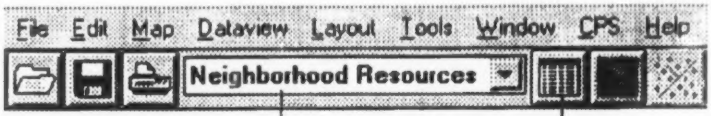
In the next few steps of this exercise, you'll open that dataview, hide all of the columns except NAME, ADDRESS and TYPE, and place the table (with just those three columns) in your layout.

Open the Dataview

To open a dataview of a map layer in an open map, you simply choose the layer on the Working Layer menu, choose ***Window – New Dataview*** and click the New Dataview button on the toolbar. First, you'll choose the Study Area Map, then the Neighborhood Resources layer

24. If the Study Area Map window is visible on the screen, simply click on it. Otherwise, choose ***Window – Study Area Map*** on the main menu.

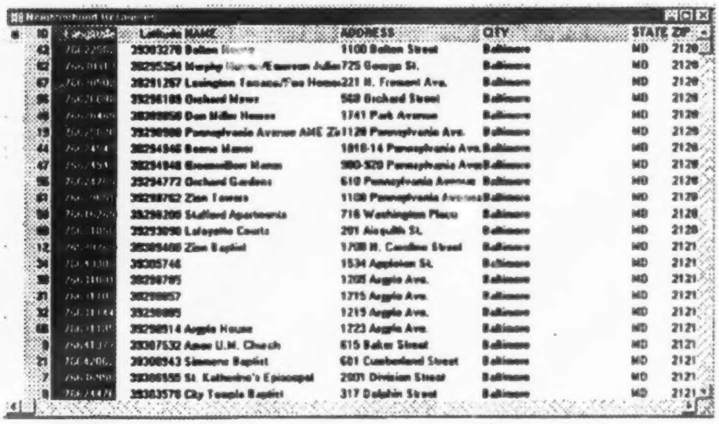
25. Select Neighborhood Resources on the Working Layer menu on the main toolbar, then click the New Dataview button as shown below.


File
Edit
Map
Dataview
Layout
Tools
Window
CPS
Help
Neighborhood Resources

The Working Layer pull-down menu. Choose Neighborhood Resources

The New Dataview button. Click to display a dataview of the Working Layer

A dataview of the Neighborhood Resources appears.

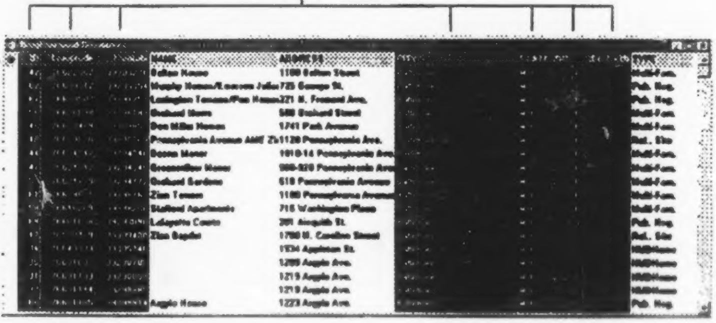

ID
Longitude
Latitude
NAME
ADDRESS
CITY
STATE
ZIP

If you were to include this dataview in your layout, all of the columns of data you see above would appear. To display just the most important information in your layout, you'll hide all but three of the columns.

26. To select the columns to hide, hold down the shift key, and click in the column heading of each column except NAME, ADDRESS, and TYPE. (You may have to stretch the dataview window a bit to show the TYPE column.)

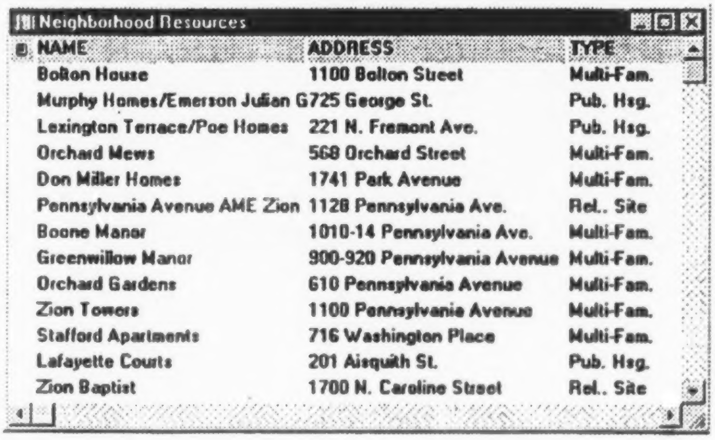
Shift-click the column headings of these columns

Column headings


NAME
ADDRESS
TYPE

27. Click the Hide Column button on the main menu.

If necessary, resize the Neighborhood Resources dataview, and the individual columns, so that the dataview resembles the illustration below.



Neighborhood Resources

NAME	ADDRESS	TYPE
Bolton House	1100 Bolton Street	Multi-Fam.
Murphy Homes/Emerson Julian G	725 George St.	Pub. Hsg.
Lexington Terrace/Poe Homes	221 N. Fremont Ave.	Pub. Hsg.
Orchard Mews	568 Orchard Street	Multi-Fam.
Don Miller Homes	1741 Park Avenue	Multi-Fam.
Pennsylvania Avenue AME Zion	1128 Pennsylvania Ave.	Rel.. Site
Boone Manor	1010-14 Pennsylvania Ave.	Multi-Fam.
Greenwillow Manor	900-920 Pennsylvania Avenue	Multi-Fam.
Orchard Gardens	610 Pennsylvania Avenue	Multi-Fam.
Zion Towers	1100 Pennsylvania Avenue	Multi-Fam.
Stafford Apartments	716 Washington Place	Multi-Fam.
Lafayette Courts	201 Aisquith St.	Pub. Hsg.
Zion Baptist	1700 N. Caroline Street	Rel.. Site

FYI

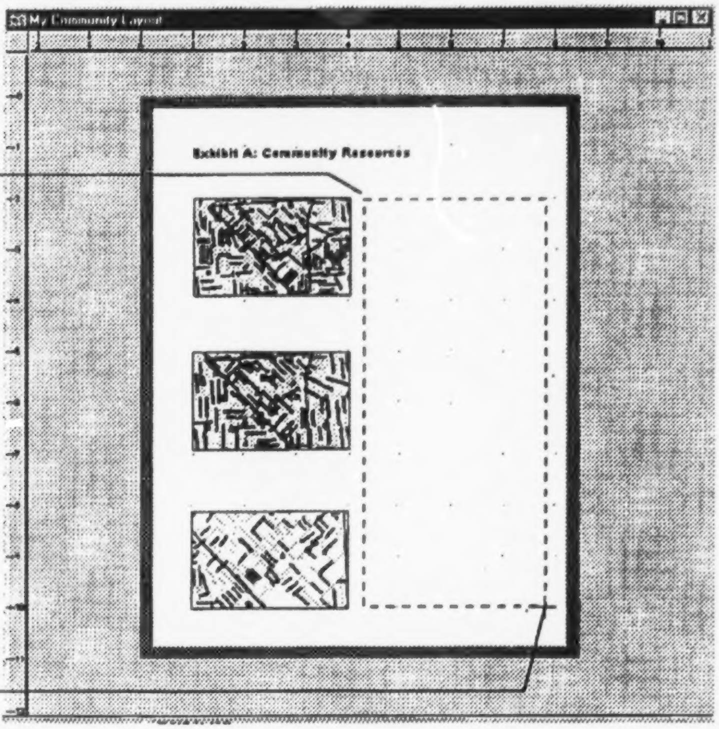
When your dataview is placed in your layout, the same columns will appear in the same order and width as they do in the open dataview.

However, you can set the text size and other characteristics when you place the dataview in your layout.

Placing the Dataview in the Layout

Now your Neighborhood Resources dataview is ready to be placed in your layout.

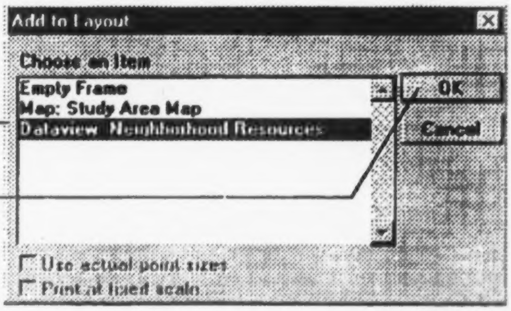
28. Select the Place in Layout tool on the main toolbar. Click-and-drag a rectangular region as shown below:


My Community Layout
Exhibit A: Community Resources

Click here...

...drag to here, and release the mouse button

29. When you release the mouse button, the Add to Layout dialog box appears. Choose Dataview: Neighborhood Resources, then click OK.


Add to Layout
OK
Cancel

Choose an Item

- Empty Frame
- Map: Study Area Map
- Dataview: Neighborhood Resources

☐ Use actual point sizes

☐ Print at fixed scale

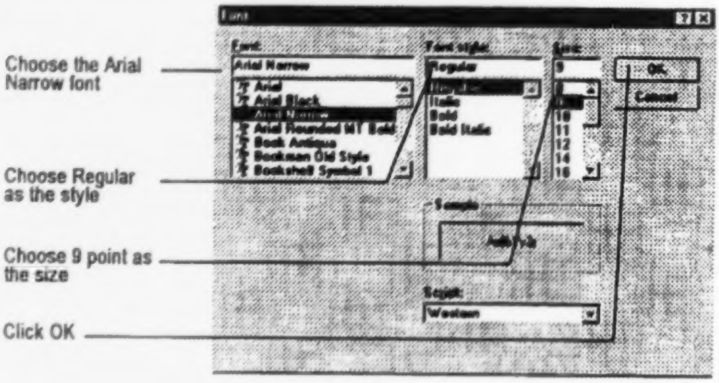
Choose the Dataview

Click OK

The Font dialog box appears. This dialog box appears whenever you place a dataview in a layout, because a dataview is essentially just text.

30. Make the font and font style selections indicated below, and click OK.

FYI
If your computer doesn't have the font Arial Narrow, substitute any similar font, such as Helvetica Narrow.


Choose the Arial Narrow font

Choose Regular as the style

Choose 9 point as the size

Click OK

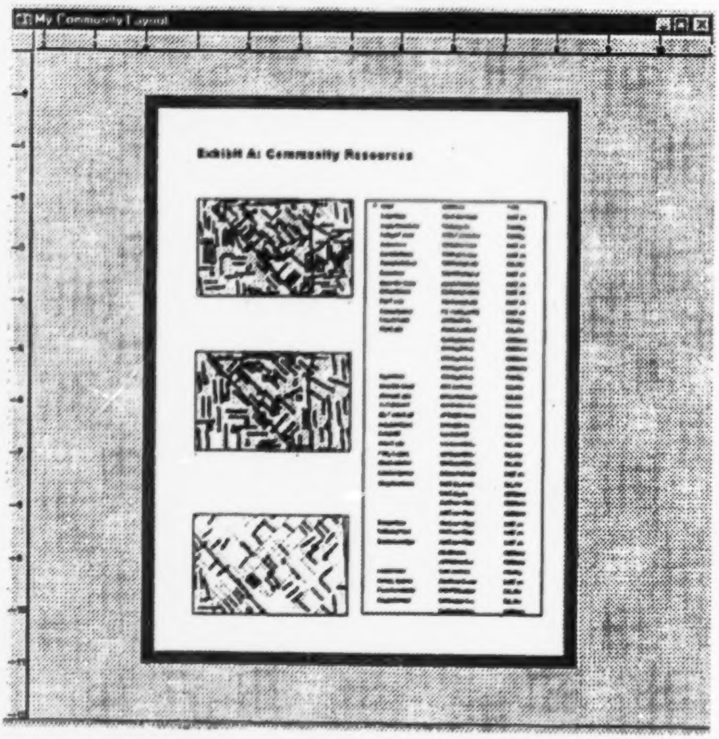
Font: Arial Narrow
Font style: Regular
Size: 9
Script: Western

Font
Arial
Arial Black
Arial Narrow
Arial Rounded MT Bold
Book Antiqua
Bookman Old Style
Bookshelf Symbol 1
Regular
Italic
Bold
Bold Italic
8
9
10
11
12
14
16
OK
Cancel
Sample
AaBbYyZz

Now the dataview should appear as a table alongside the three maps in your layout:

FYI
If the three columns don't fit the box in which you placed the dataview, you can resize the frame. Select the pointer tool from the main toolbox, click on the dataview, and "resize handles" will appear on the corners and sides.

If the dataview is still too large, click on it once with the Pointer tool to select it, and press the Delete key. The dataview will disappear, then you can return to Step 28 and try a smaller font.


My Community Layout
Exhibit A: Community Resources

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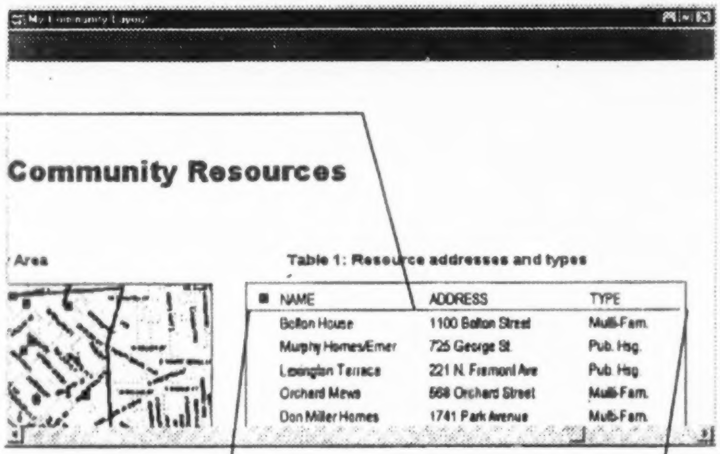
Drawing Lines on Your Layout

The Freehand Line tool on the main toolbar can be used to add call-out lines, arrows, borders, and other graphical elements. You're going to use the line tool to simply add a horizontal line across the table, to separate the column headers from the data in the table.

31. Select the Freehand Line tool from the main toolbar.

    The tool works very simply: just click once to begin a line, and double-click where you want the line to stop.

32. On the table, click once on the left-hand border of the table, just below the column header "NAME." Move your mouse pointer horizontally to the right-hand table border, and double-click to end the line.



To add this line...

Community Resources

Area

Table 1: Resource addresses and types

NAME	ADDRESS	TYPE
Bolton House	1100 Bolton Street	Multi-Fam.
Murphy Homes/Emer	725 George St.	Pub. Hsg.
Lexington Terrace	221 N. Fremont Ave	Pub. Hsg.
Orchard Mews	568 Orchard Street	Multi-Fam.
Don Miller Homes	1741 Park Avenue	Multi-Fam.

...click once with the Line tool here...

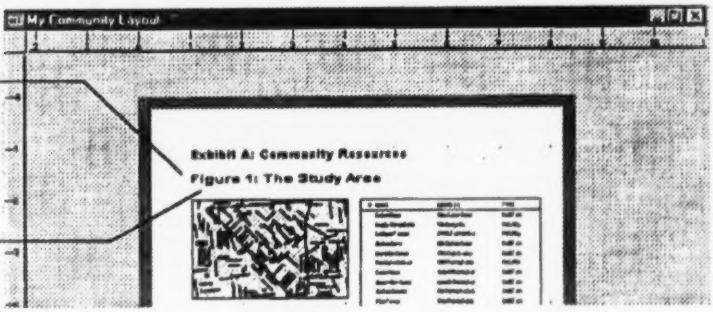
...and double-click here to finish the line

FYI
The illustration at right is a zoomed view of the layout. Just as with CPS+ maps, you can use the Zoom In tool to select an area by clicking and dragging.
The selected area will fill the layout window. (You can also select a zoom level from the menu in the main toolbar.)
High zoom levels are useful for precisely positioning layout elements.

Adding Labels to Your Layout

In the next few steps you'll create a figure label for the first map illustration in your layout, then you'll duplicate it three times to make labels for the other two maps and the table. Then you'll edit the four labels and line them up with their respective map and dataview frames.

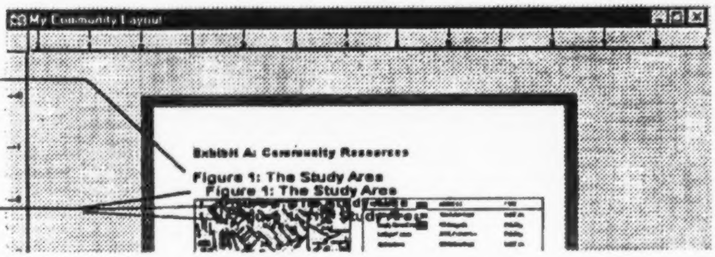
33. Select the Text tool from the main toolbox. Click and drag a text box above the first map frame in the layout, as shown below. Type the label text, but don't worry about the size—oversized text is easier to work with, and you can resize the text later when all the labels are on the layout.


My Community Layout
Exhibit A: Community Resources
Figure 1: The Study Area

Drag out a text box about here

Type the text, "Figure 1: The Study Area"

34. Select the Pointer tool and click once on the new text box to select it (if it is not already displaying handles). Then click the **Duplicate** button three times to make copies of the label for the other two maps and the table.


My Community Layout
Exhibit A: Community Resources
Figure 1: The Study Area
Figure 1: The Study Area

After first selecting the text box...

...click the Duplicate tool three times to create these three copies

35. Reposition the labels by dragging each one with the Pointer tool into approximate position over the maps and table.

36. Double-click each label to edit the text as follows:

- For the second map label: Figure 2: "Use actual point sizes" selected
- For the third map label: Figure 3: "Print at fixed scale" selected
- For the table label: Table 1: Resource Name, Location and Type

TIP
You can move multiple objects at once, as a group.

Simply select them by clicking on each one while holding down the shift key. (Handles will appear on each item.) Then release the shift key and click-and-drag any one of the selected items. All of the selected items will move together.

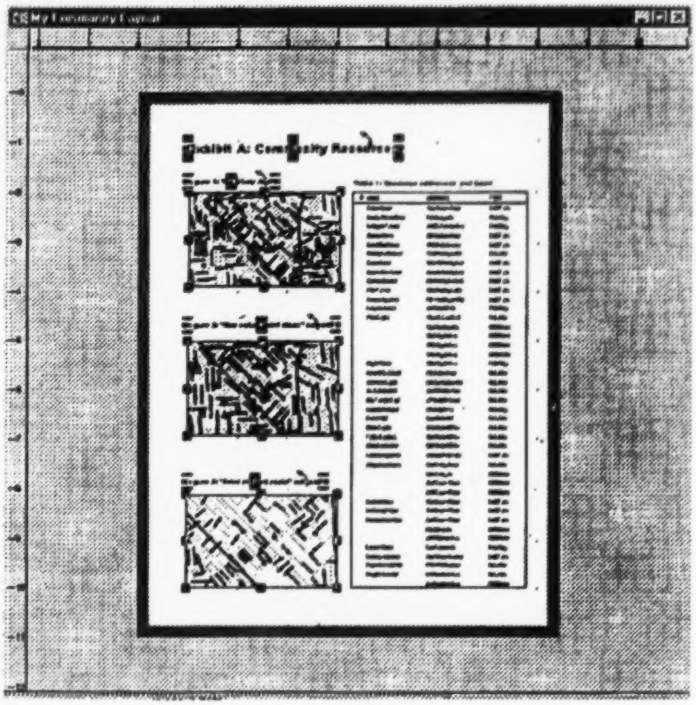
To deselect one of the selected items, hold down the shift key and click once again on the item.

Aligning the Titles, Maps, and Tables

The software has handy tools for aligning or distributing layout elements on your layout. Next you'll use one of those alignment tools to make the layout title, the three maps, and the map labels all align themselves along their left edges.

37. Select the Pointer tool. Holding down the shift key to select multiple items, click on each of the maps, their labels ("Figure 1," etc.), and the main title ("Exhibit A:...").

    When all seven items are selected, they will display "handles" as shown below:



38. Click the Align Left Edge tool on the main menu.

    All of the objects should be aligned with whichever object was already furthest left.

39. Repeat this process by using the Pointer tool to select the table and its label, and then using the Align Left Edge tool to align them.

TIP
Once you have placed several labels on your layout, you can set the type size more precisely for several labels at once:

First, select the labels by shift-clicking on each one with the Pointer tool.

Then release the shift key and double-click on any of the selected labels.

The Freehand Text dialog box will appear, allowing you to choose the size (and other text attributes) for all of the selected text items.

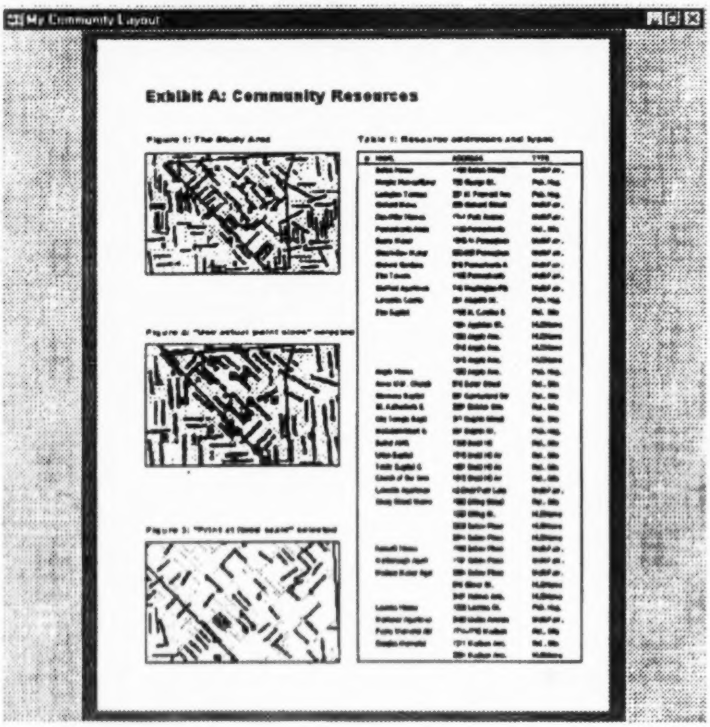
Saving and Printing Your Work

Congratulations! You've completed a layout. In a moment we'll take a look at the differences between the three versions of the Study Area Map in your layout. But first save all the work you've done and print out a copy.

40. Select ***File – Save*** from the main menu.

41. Select ***File – Print*** from the main menu. Choose Portrait orientation, choose your printer's maximum resolution, and click OK.

    Your printed layout should look like this:


My Community Layout
Exhibit A: Community Resources
Figure 1: The Study Area
Table 1: Resource addresses and types
Figure 2: "Use actual point sizes" selected
Figure 3: "Print at fixed scale" selected

Understanding the *Add to Layout* Options

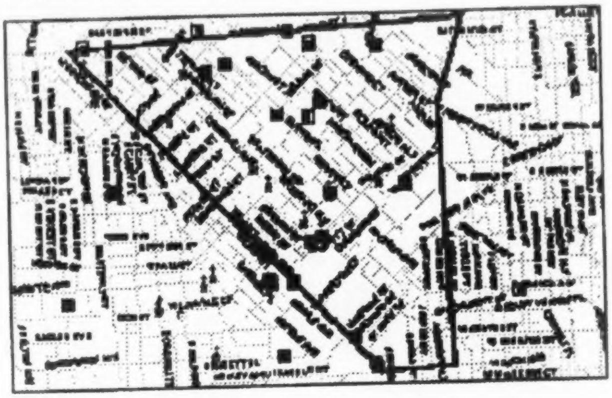
Whenever you place a map in a layout, the Add to Layout dialog box lets you choose from three options: Use actual point sizes, Print at fixed scale, or neither option (for example, see page 25).

The option you choose can have a big impact on how your maps appear in printed output. The following page explains and illustrates the differences between these options, using a zoomed-in view of the layout you created in this exercise.

With neither option selected

- The map is scaled down to fit the 2" x 3" frame.
- The map features are scaled down in the same proportion.

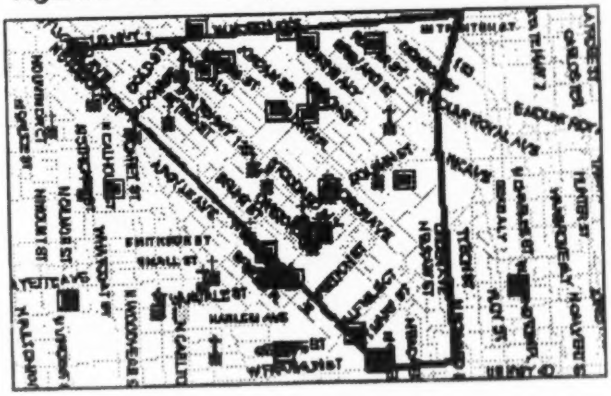
Figure 1: The Study Area



With "Use actual point sizes" selected

- The map is scaled down to fit the 2" x 3" frame on the layout.
- The map features are not scaled down even though the map is reduced—feature labels and symbols maintain the size set in the original map.

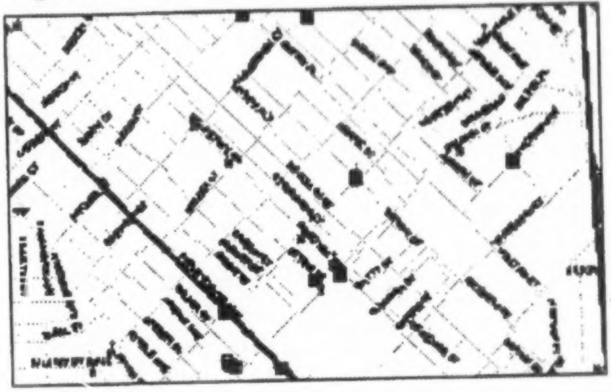
Figure 2: "Use actual point sizes" selected



With "Print at fixed scale" selected

- The map is not scaled down to fit the frame. Instead, the layout frame shows a 2" x 3" view cut from the center of the Study Area Map—at the same scale as the original.
- Just as when "Use actual point sizes" is selected, the map features keep their original sizes.

Figure 3: "Print at fixed scale" selected



Wrapping Up

In this exercise you learned the essentials of creating layouts:

- You created a layout; placed frames, maps, and a dataview; and added text labels.
- You learned to use a few of the essential layout tools such as Layout Options, Place in Layout tool, Text tool, Line tool, and one of the Align tools.
- Finally, you learned how to control the scale of your map and its features by choosing the correct options in the Add to Layout dialog box.

With the tools and techniques you've learned in this exercise, you're equipped to prepare a variety of professional-looking layouts for reports, proposals and presentations.

To make your own layouts as professional and compelling as they can be, we urge you to experiment with other layout tools for alignment and arranging, as well as tools for drawing circles, rectangles and polygons.

Appendix A:

Regional Geographic Files (d:\*.cdf)

File Name	File Description
CCBG	Census block group areas
CCCD105L	105th Congressional District areas (low resolution)
CCCNTYH	County areas (high resolution)
CCCNTYL	County areas (low resolution)
CCHIGHWY	Major highway lines
CCISHWY	Interstate highway lines
CCLNDMRK	Landmark politics
CCMSA	Metropolitan Statistical Areas (MSAs)
CCPLACE	Census Designated Place areas
CCPPL	Populated place points
CCSTATEH	State and territory areas (high resolution)
CCSTATEL	State and territory areas (low resolution)
CCSTREET	Street lines from 1994 TIGER/Line files
CCTRACT	Census tract areas
CCUSCITY	State capital points and points for cities over 30,000
CCUSRAIL	Railroad lines
CCWATBLK	Coastal and inland water areas
CCZIP5	5-Digit ZIP Code areas
CCZIP5PT	5-Digit ZIP Code points
EZEC	Empowerment Zone and Enterprise Community areas
HUDOFF	HUD Regional Office points
LOWMOD	Low and Moderate Income Areas
PH_PROJ	Public Housing Agency project points

PROJECTL	HUD Project location points
SMCTPROJ	Small Cities Project points
File Name . . . cont.	**File Description . . . cont.**
STATE	Statewide allocations for Small Cities Project (areas)
UNDERSRV	CRA Underserved Areas

APPENDIX B:

SUMMARY EXERCISES ANSWER SHEET

CHAPTER TWO:

1. True
2. Home Marker Window; My Neighborhood
3. Pan Tool
4. True
5. Layers
6. -----class discussion----

CHAPTER THREE:

1. True
2. Project Info Tool; HUD Programs
3. Select by Pointing; Select by Shape; Select by Circle
4. False, you can also access information on the Public Housing Authority

CHAPTER FOUR:

1. True
2. An unique identifier; Geographic Location such as an address, or latitude or longitude
3. In the dataview the asterisk represents an address that could not be geocoded. In the map the asterisks mark addresses that are geocoded.
4. Color Theme Map Wizard

CHAPTER FIVE:

1. True
2. True
3. True
4. Project layer

CHAPTER SIX:

1. True
2. False, standard geographic files can be edited
3. ----class discussion----
4. True
5. Contents

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